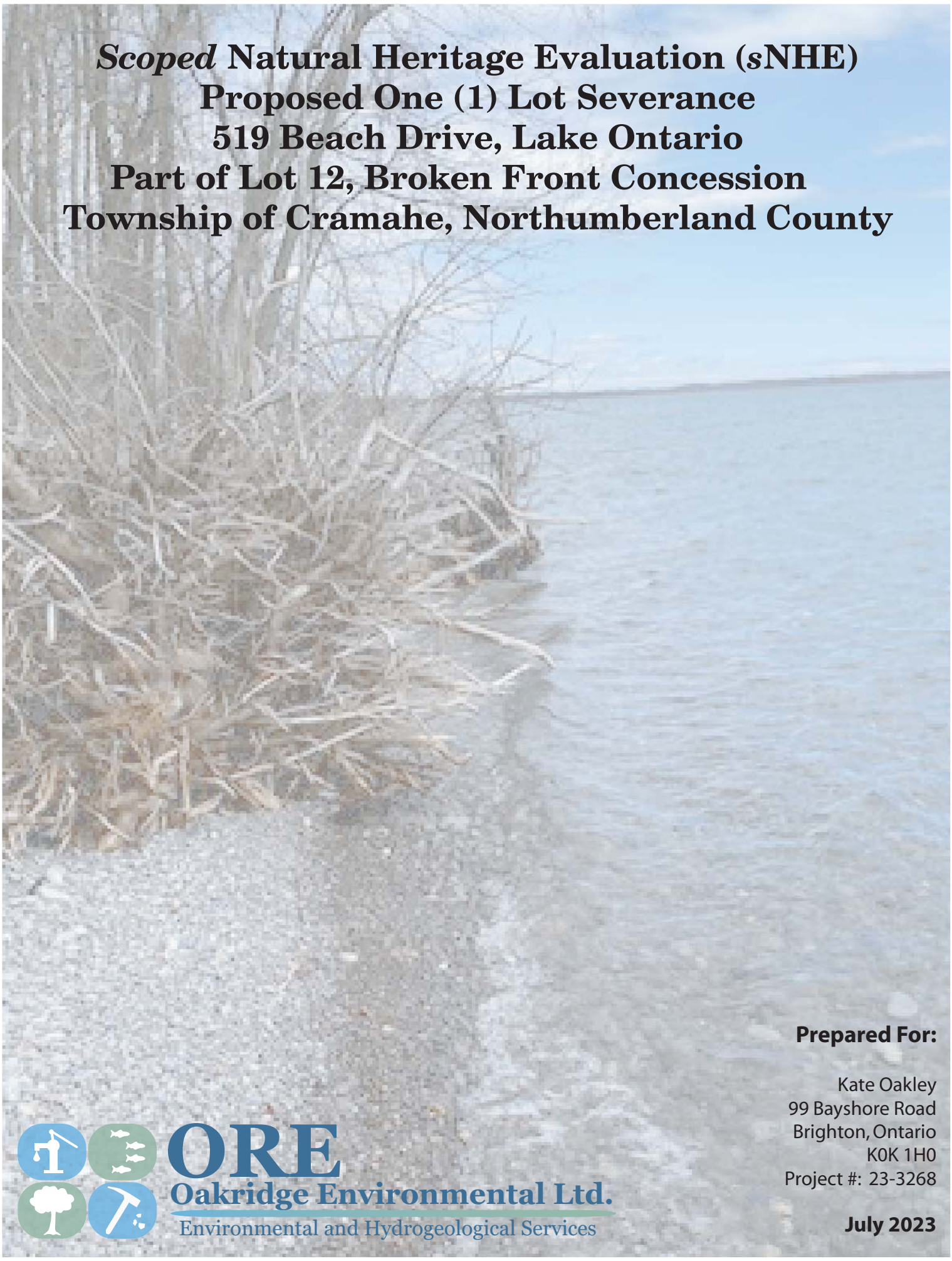
Scoped Natural Heritage Evaluation (*s*NHE)
Proposed One (1) Lot Severance
519 Beach Drive, Lake Ontario
Part of Lot 12, Broken Front Concession
Township of Cramahe, Northumberland County



Prepared For:

Kate Oakley
99 Bayshore Road
Brighton, Ontario
K0K 1H0
Project #: 23-3268

July 2023

ORE
Oakridge Environmental Ltd.
Environmental and Hydrogeological Services

ORE
Oakridge Environmental Limited
Environmental and Hydrogeological Services

July 24, 2023

99 Bayshore Road
Brighton, Ontario
K0K 1H0

Attention: **Kate Oakley**

Re: *Scoped* Natural Heritage Evaluation (*s*NHE)
Proposed One (1) Lot Severance
519 Beach Drive, Lake Ontario
Part of Lot 12, Broken Front Concession
Township of Cramahe, Northumberland County
ORE File No. 23-3268

We are pleased to provide this *Scoped* Natural Heritage Evaluation (*s*NHE) for the above-referenced property. This report has been prepared as per our proposal of March 27th, 2023.

The subject site contains Significant Wildlife Habitat, the Hunt and Beach Road-Popham Bay Provincially Significant Wetland and unevaluated wetland in the southern portion of the property associated with Lake Ontario. As such, the main concern with respect to the proposed severance is the potential for impacts on these Key Hydrologic Features/Key Natural Heritage Features (KNHFs). However, by implementing the mitigation and protection measures recommended in this report, the risk of impacts can be eliminated.

We trust that this report will be sufficient for any agency reviews. Should you have any questions or require clarification, please do not hesitate to contact our office.

Yours truly,
Oakridge Environmental Ltd.

Rob West, HBSc., CSEB
Senior Environmental Scientist

Table of Contents

List of Figures

List of Appendices

Scoped Natural Heritage Evaluation (*s*NHE)
Proposed One (1) Lot Severance
519 Beach Drive, Lake Ontario
Part of Lot 12, Broken Front Concession
Township of Cramahe, Northumberland County

1.0 Introduction

1.1 General

Oakridge Environmental Ltd. (ORE) is pleased to present our report outlining the results of our *scoped* Natural Heritage Evaluation (*s*NHE) in support of a one (1) lot severance situated along the northern shore of Lake Ontario (Figure 1).

It is understood that the proponent wishes to sever one (1) lot from their property at 519 Beach Drive for the purpose of single residential development. The proposed severance lot would have frontage along the west side of Union Road, and the north shore of Lake Ontario. The property possesses Provincially Significant and Unevaluated Wetland and is located within the Growth Plan for the Greater Golden Horseshoe (GPGGH or "Growth Plan"). The property is also adjacent to Lake Ontario. Therefore, an *s*NHE is required to support the severance application and demonstrate whether the subject property can sustainably accommodate the proposed severance and development without resulting in unacceptable impacts to any Key Natural Heritage Features (KNHFs) defined by the County and GPGGH.

1.2 Site Location and Access

The subject site consists of approximately 6.7 acres (2.7 ha) and is located at 519 Beach Drive within Part Lot 12, Broken Front Concession, Township of Cramahe, Northumberland County (Figures 1 and 2). The lands to be retained contain a single residence and associated structures in the north portion.

The site is accessed from Colborne or Brighton via County Road 2 (east or west) to Union Road. Then south on Union Road to Beach Drive. The subject site is located on the southwest corner of the intersection of Union Road and Beach Drive.

The property owner is seeking a single severance for the purpose of single residential development. The severance is proposed to be approximately 4.6 acres (1.9 ha) located in the southern portion of the site. The development configuration is to be determined based on the outcome of this study.

2.0 Policy Framework

2.1 Provincial Policy Statement

The 2020 Provincial Policy Statement (PPS) provides policy direction on matters of provincial interest related to land use planning and development. This document stresses the need for appropriate development while protecting resources of provincial interest, public health and safety, and the quality of Natural Heritage Features. Section 3 of the Planning Act requires that planning authorities shall "have regard for" the PPS when exercising any authority that affects municipal planning matters. Since this is a Planning application, the Township and County will often apply the most recent version of the PPS Natural Heritage section requirements to ensure any/all natural heritage features are detected and the proposed development is cognisant of the features.

ORE is knowledgeable of and has reviewed Section 2.1 (Natural Heritage) of the 2020 PPS with specific regard to the applicability of the Policy to the subject site. In addition, ORE has reviewed and utilized the methodologies outlined in the Ministry of Northern Development, Mines, Natural Resources and Forestry's (MNDMNRF) *Natural Heritage Reference Manual for Natural Heritage Policies of the Provincial Policy Statement, 2005*.

The PPS lists a number of features that must be addressed, including but not limited to the following:

- Significant Woodlands;
- Significant Wetlands;
- Significant Valleylands;
- Significant Wildlife Habitat (SWH);
- Significant Fisheries Habitat, and
- Species at Risk.

The MNDMNRF's assessment requirements under the *"Significant Wildlife Habitat Criteria Schedules For Ecoregion 6E"* is applicable to Planning Applications. ORE staff reviewed the site's vegetation and formed a candidate SWH list, which was further refined based on our knowledge of the site. The SWH assessment focussed on the type of vegetation to be impacted by the development and not all of the ELC types observed on the subject property.

Similarly, any remaining Key Natural Heritage Features listed above that have been identified on the property have also been thoroughly reviewed and discussed as per the PPS requirements.

This report has been prepared with regard for the relevant sections of the PPS.

2.2 Growth Plan for the Greater Golden Horseshoe (Growth Plan)

In July of 2017, the Growth Plan for the Greater Golden Horseshoe (Growth Plan) was issued. The Growth Plan is a policy document intended to assist Planning authorities implement a set of standardized objectives for development within their jurisdictions. Among other things, the Growth Plan established a Natural Heritage System (NHS) in accordance with the PPS for the entire region. The NHS identifies Natural Heritage Features (NHF) and water resource systems. The Growth Plan prescribes certain setbacks from these features, typically in the form of a "Vegetation Protection Zone" (VPZ). The NHS and these prescribed setbacks are intended to be applicable to all new development (requiring a Planning application) outside the designated settlement areas within the Greater Golden Horseshoe.

Upon reviewing the provincial NHS mapping, it was determined that the subject site is entirely mapped as an NHS designated area. This report has been prepared to meet the requirements of the Growth Plan.

2.3 County of Northumberland/Township of Cramahe

It is understood that Northumberland County has developed a Natural Heritage System Plan intended to preserve and enhance the natural environment. The NHS was endorsed by County Council in July 2020, and an Official Plan Amendment (OPA) was initiated. Approval of the Plan is pending, at which time the mapping and policies will be incorporated into the County Official Plan. In the meantime, all hydrologically related NHF such as wetlands, watercourses, seeps and springs (etc.), are subject to the requirements under the Provincial Growth Plan.

Once implemented, the County's NHS will supercede the provincial NHS with respect to the remaining KNHFs identified on-site.

For now, Schedule B - Resource Areas, Constraint Areas and Waste Management (November 10, 2016) of the current Official Plan is provided in Appendix A. Schedule B in the OP illustrates the PSW in the area of the subject property as being the main constraint in the area. Schedule A - Land Use in the OP, applies an Environmental Protection (EP) zone to the Hunt and Beach Road-Popham Bay PSW (Appendix A).

Nevertheless, our assessment has reviewed the conditions associated with all of the KNHFs on-site and on the immediately surrounding lands.

2.4 Lower Trent Conservation (LTC)

The subject site is regulated by Ontario Regulation 163/06, the *Development,*

Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation of the LTC.

LTC staff attended the site with the property owner and had informally mentioned where the boundary of the PSW occurs on the subject property.

The Conservation Authorities do not provide planning comments unless it relates to the watercourse as hazard lands. Their comments have been narrowed to flood related issues/concerns as per the Province's Bill 23, More Homes Built Faster Act, 2022.

This study was prepared to meet the requirements of the LTC regulation with respect to the wetland. ORE staff did not identify any flood limit on the property. LTC should be consulted in this regard.

3.0 Physical Setting

3.1 Topography and Drainage

As illustrated by Figure 2, the subject site (which includes the proposed severance lot) occurs in an area of minimal topographic relief, with a very gradual slope to the southwest. A few metres of relief occurs along the shoreline in some areas.

The mapping indicates that part of the Hunt and Beach Road-Popham Bay (Provincially Significant) Wetland crosses onto the southern part of the site from the west, with a small pocket of unevaluated wetland extending to the site's eastern boundary. While the mapping indicates that there are some channelized watercourse features within the main wetland, these occur further west and not within the subject site.

3.2 Geological Setting

The geology of the subject site and surrounding area is fairly simple. As illustrated by Figure 3, most of the map area is underlain by coarse glaciolacustrine soils, consisting of sand and fine gravel. These permeable soils represent the remnants of the ancient beach and near-shore environment of Lake Iroquois, that inundated the area in the post-glacial period. Despite the extensive presence of the glaciolacustrine deposits, the site is mapped as having Paleozoic bedrock at the surface, with minor organic soils associated with the local wetlands.

It is possible that thin layers of the glaciolacustrine deposits once covered the site as well, however, were subsequently eroded away by wave action, leaving outcrop and subcrop.

At the very northernmost extent of the map area of Figure 3, there is an occurrence of till, composed of a mixture of sand, silt, clay and minor gravel, commonly referred to as Newmarket Till. This till stratum is widely recognized as a regional aquitard due to its comparatively low permeability. As such, it can act as a limiting layer or substrate with regard to the vertical movement of groundwater. The till is also commonly drumlinized, with drumlin ridges occurring widely. However, no drumlins are mapped near the subject site. It is possible that the Newmarket Till could occur below the glaciolacstrine deposits, immediately above the limestone.

While the mapping suggests that any soil cover on the subject site will be minimal, the mapping cannot differentiate whether there are pockets of soil in bedrock depressions (for example). As such, some soil accumulations are possible in this setting.

From perusal of the Ministry of the Environment, Conservation and Parks (MECP) well record database, we note that the log of nearby well No. 4500367 indicates that the soils consist of "sand clay with gravel" (which could be a reference to the till), extending to a depth of 2.4 m where the bedrock was encountered. The well record also indicates that while the aquifer was encountered in the limestone, the static groundwater level occurred at approximately 1.5 m depth, which would be within the overburden. The logs of other nearby recorded wells suggest similar conditions, although the thickness of the overburden varies considerably.

4.0 Information Resources

4.1 Natural Heritage Information Centre (NHIC)

The NHIC provides an online database managed by the Ministry of Northern Development, Mines, Natural Resources and Forestry (MNDMNRF). Within the database, Ontario has been divided into a grid consisting of 1 km^2 areas or regional squares, each given a unique identifier. The squares can be searched for species of conservation concern, plant communities, wildlife concentration areas and natural areas. This search includes 120 m of adjacent lands around the property.

The search area falls within one (1) of the 1 km^2 squares: 18TQ7024.

The query indicates that three (3) Natural Areas and one (1) Wildlife Concentration Area are recorded in the area:

Natural Areas:

Hunt and Beach Road - Popham Bay Wetland - occurs in the southern portion of the site.
Hunt and Beach Road Wetland - on-site.

Lakeshore Road Wetland - off-site, and to the east of the subject site.

Wildlife Concentration Area:

Mixed Wader and Nesting Colony - presumed to be associated with the PSW.

The query indicates that six (6) Species at Risk (SAR) have been recorded in the area:

Common Name	Scientific Name	SAR Status
Bobolink	*Dolichonyx oryzivorus*	Threatened
Eastern Meadowlark	*Sturnella magna*	Threatened
Henslow's Sparrow	*Ammodramus henslowii*	Endangered
Least Bittern	*Ixobrychus exilis*	Threatened
Midland Painted Turtle	*Chrysemys picta marginata*	Special Concern[1]
Snapping Turtle	*Chelydra serpentina*	Special Concern

1 - COSEWIC status only

Brief descriptions of the above species and their preferred habitats are included in Appendix B.

Our site inspections included targeted searches for potential SAR habitat of these species. An excerpt from the NHIC's website illustrating the location of the square relative to the 120 m search area around subject site is also included in Appendix C.

4.2 Ontario Breeding Bird Atlas (OBBA)

The OBBA[1] provides up-to-date reliable information on birds within Ontario. The information includes species descriptions, habitats, range, documented sightings, etc. The subject site occurs within the 10 km^2 area mapped as 18TTP77, Region 17, Northumberland. The Summary Sheets for this atlas area are provided in Appendix D.

From our review of the information, significant breeding species that could potentially be associated with habitats in the site area include the following:

[1] managed by Bird Studies Canada.

Common Name	**Scientific Name**	**SARO Status**
Bank Swallow	*Riparia riparia*	Threatened
Barn Swallow	*Hirundo rustica*	Special Concern
Bobolink	*Dolichonyx oryzivorus*	Threatened
Eastern Meadowlark	*Sturnella magna*	Threatened
Eastern Whip-poor-will	*Antrostomus vociferus*	Threatened
Eastern Wood-Pewee	*Contopus virens*	Special Concern
Grasshopper Sparrow	*Ammodramus savannarum*	Special Concern
Least Bittern	*Ixobrychus exilis*	Threatened
Red-headed Woodpecker	*Melanerpes erythrocephalus*	Endangered
Wood Thrush	*Hylocichla mustelina*	Special Concern

Brief descriptions of the listed species and their preferred habitats are included in Appendix B.

The site inspections included a review of potential SAR habitat and targeted searches for the listed species.

4.3 eBird Database

eBird is a citizen science database, whereby birding individuals can attend public areas referred to as "hotspots" and list species of bird they detect each time they visit the hotspot location. According to the eBird Geographic Information System (GIS) database, the nearest hotspot is the Brighton - Beach Dr Marsh (L9755720) site, located approximately 500 m west of the site. A total of ninety (90) species were recorded at this hotspot (Appendix E).

Of the 90, six (6) are SAR and listed below:

Common Name	**Scientific Name**	**Status**
Bald Eagle	*Haliaeetus leucocephalus*	Special Concern
Barn Swallow	*Hirundo rustica*	Special Concern
Bobolink	*Dolichonyx oryzivorus*	Threatened
Eastern Meadowlark	*Sturnella magna*	Threatened
Least Bittern	*Ixobrychus exilis*	Threatened
Wood Thrush	*Hylocichla mustelina*	Special Concern

Brief descriptions of each of the SAR and their preferred habitats are included in Appendix B.

4.4 iNaturalist Database

The iNaturalist database provides a geographical site map which contains individual species occurrences. The NHIC version of the iNaturalist database is specific to those species tracked by the NHIC. These include SAR as per those identified in the Species at Risk Ontario website and also provincially rare species that the NHIC tracks in their records. The occurrence data includes the professional/surveyors name, confirmation identification by other professionals, occurrence photos, and the date the rare species was observed. The search extent is an approximate 2 km^2 radius from the approximate property boundary.

The iNaturalist database was reviewed to determine if any SAR sightings have occurred either on, or within the vicinity of the subject site. Two (2) SAR species were reported either directly on or in the general vicinity of the subject site. The SAR occurrences have been compiled below:

Common Name	**Scientific Names**	**SAR Status**
Monarch	*Danaus plexippus*	Special Concern
Piping Plover	*Charadrius melodus*	Endangered

Rare species were reported as follows:

Common Name	**Scientific Name**	**S-Rank**
Bushy Aster	*Symphyotrichum dumosum*	S2
Great Egret	*Ardea alba*	S2B

Descriptions of the SAR species occurrences are provided in Appendix B.

4.5 Fish ON-Line

The Lake Ontario shoreline was inspected to determine its suitability for fish and fish habitat. No traps or nets were applied to the watercourse. A scientific collectors permit must be obtained to collect any/all fish species in a watercourse. The permit must be obtained from the MNDMNRF.

The Fish ON-Line database was reviewed. The nearest data location is Lake Ontario, located partially on the site and to the south. The list includes the following fish species:

Black Crappie (Pomoxis nigromaculatus)
Bluegill (*Lepomis macrochirus*)
Bowfin (*Amia calva*)
Brook Trout (*Salvelinus fontinalis*)
Brown Bullhead (*Ameiurus nebulosis*)
Brown Trout (*Salmo trutta*)
Channel Catfish (*Ictalurus punctatus*)
Common Carp (*Cyprinus carpio*)
Freshwater Drum (*Aplodinotus grunniens*)
Lake Trout (*Salvelinus namaycush*)
Lake Whitefish (*Coregonus clupeaformis*) - Threatened*
Largemouth Bass (*Micropterus salmoides*)
Muskellunge (*Esox masquinongy*)
Northern Pike (*Esox lucius*)
Pumpkinseed (*Lepomis gibbosus*)
Rainbow Smelt (*Osmerus mordax*)
Rainbow Trout (*Oncorhynchus mykiss*)
Rock Bass (*Ambloplites rupestris*)
Round Whitefish (*Prosopium cylindraceum*)
Smallmouth Bass (*Micropterus dolomieu*)
Walleye (*Sander vitreus*)
White Bass (*Morone chrysops*)
White Perch (*Morone americana*)
White Sucker (*Catostomos commersonii*)
Yellow Perch (*Perca flavescens*)

*Opeongo Lake large and small-bodied populations

None of the above-mentioned fish are SAR with the exception Lake Whitefish. This particular population associated with Lake Ontario is not a species at risk, only the population related to Opeongo Lake large and small-bodied population is threatened. The only fish species observed in the area of the subject site are associated with the open water areas of Lake Ontario. ORE staff expects they could be Yellow Perch, Walleye, Smallmouth Bass, Rock Bass, Pumpkinseed, and Bluegill. These species will cast their egg mass on a gravel bed in gravel/sand beach environments along the coast of Lake Ontario. The other species prefer flowing water regimes or aquatic weedy bays which do not occur on the subject site's water frontage or wetland areas.

5.0 Ecological Findings

5.1 Site Inspection Summary

For this assessment, ORE staff conducted one (1) detailed site inspection on the

following date:

Date of Inspection	**Time of Inspection**	**Temp. ^{O}C**	**Beaufort (Wind) Scale**	**Conditions and purpose of site inspection**
May 5th, 2023	9:30 AM- 11:30 AM	16	3 - gentle breeze	Mainly clear and mild spring day. Migratory birds, vegetation ID/Mapping. Fisheries surveys. Diurnal herptile surveys.

From the site inspection data, a map of the general vegetation communities and habitats occurring on the property has been prepared (Figure 4). During the inspection, faunal observations were also recorded. Standard methodologies were utilized for the mapping exercises and species identification. A series of site photos are provided in Figures 5 and 6, identifying the site conditions in the vicinity of the proposed severance lot.

5.2 Survey Methodologies/Protocols

5.2.1 Vegetation

The site has been characterized by its various vegetation communities using the methodologies included in the *Ecological Land Classification (ELC) - First Approximation and Its Applications* (1998). The classification of each vegetation community has been designated in accordance with the Ecological Land Classification for Southern Ontario (FG-02), 1998. Where the 1998 ELC does not adequately identify the vegetation community, the 2008 Draft ELC is then applied.

Prior to conducting the site inspection, aerial photography of the subject site was reviewed to roughly delineate communities based on recognizable vegetation differences. The assemblage of plant species were subsequently inspected in each identified community and the vegetation types confirmed. In some cases, the dominant vegetation types were recorded and boundaries of any sensitive communities were mapped using a differential GPS.

Any wetland-type vegetation communities were investigated from the perspective of whether they are hydrologically sensitive and/or whether they may contain a Species at Risk.

5.2.2 Avifauna

ORE staff attended the site during the peak breeding bird season, and endeavoured to detect all available avian species by sight, calls and notes, within and proximal to the site. Bird calling devices and "pishing and squeaking" were periodically used to attract bird species from within the more densely vegetated areas to an opening or the edge of the property. ORE staff also used the I-Bird Pro app on a cellular phone to broadcast calls of potential SAR avian that could occur within the property. Broadcasting the call of the SAR may illicit a call-back from the species and/or entice it to come within range to observe it, if they are still present in late summer period.

All species overheard or observed during the survey were recorded.

5.2.3 Mammals

Mammals were detected utilizing the protocols outlined in the MNDMNRF's March 1998 - Wildlife Monitoring Programs and Inventory Techniques for Ontario. Mammals were generally identified by either visual encounters or via their tracks and/or scat droppings at the site.

Surveys were conducted specifically in areas where tracks could be identified such as the edge of the wetlands/creek corridors and after precipitation events on-site, where fresh tracks could easily be observed in mud.

5.2.4 Herptiles

The protocol employed for detection of herptiles followed MNDMNRF's March 1998 - Wildlife Monitoring Programs and Inventory Techniques for Ontario. Furthermore, the December 2016 Survey Protocol for Ontario's Species at Risk Snakes was also implemented.

During the inspection, visual encounter surveys were conducted while searching through brush piles, rolled-over lumber/boards/metal sheets (artificial cover) and dead-fall within the woodland habitats to determine whether any significant species of herptile could be detected. The visual encounter surveys extended to the roads to identify dead-on-road herptiles.

5.2.5 Significant Wildlife Habitat (SWH)

SWH has been evaluated utilizing the *Significant Wildlife Habitat Criteria Schedules for Ecoregion 6*E, published by the MNDMNRF (January 2015).

Potential SWH were evaluated according to the criteria outlined in the schedules for candidate SWH. The SWH tables were consulted to assess whether the site possesses Seasonal Concentration Areas of Animals, Rare Vegetation Communities, Specialized Habitats of Wildlife considered SWH, and Animal Movement Corridors.

5.3 Vegetation

ELC inspections were focussed on the proposed severance and immediate adjacent lands, as per the recommendations of the MNDMNRF's Natural Heritage Reference Manual. Photos of the communities are illustrated in Figures 5 and 6.

Based on our site inspection, we have identified the following vegetation communities on the site, as per the 1998 and/or the draft 2008 Ecological Land Classification (ELC) for Southern Ontario.

Upland Communities:

1. Cultural Meadow (CUM)

CUM communities result from cultural or anthropogenic-based disturbances/alterations to land. Tree cover is typically less than 25% and the presence of shrubs is also less than 25%. The main groundcover associated with this community consists of meadow-type species such as non-native and native grasses and wildflowers. Typically, these species tend to congregate within recently/continually broken or disturbed open ground where the trees have been cleared.

This ecosite occurs within the area where the severance is proposed to occur. There are no structures within the area of the proposed severance. It contains tallgrass meadow.

The proposed severance would include a good majority of the open field/meadow community in the southern portion of the existing residential area associated with the CVR_4 habitat identified below.

2. Fine Mineral Fencerow (TAGM5)

The Fine Mineral Fencerow (TAGM5) is described under the ELC as having a loamy substrate. Fencerows can also be "Medium" and "Coarse", referring to the type of substrate the fencerow possesses. In this case, there is very little soil accumulation and appears to be a conifer planted fencerow (consisting of Scot's Pine - *Pinus sylvestris* and White Pine - *Pinus strobus)* that was planted years ago as a privacy screen between the subject site and neighbour to the west.

The proposed severance will include a portion of the west conifer fencerow/hedgerow along the edge of the subject site. Presumably, the fencerow/hedgerow will be retained as a privacy screen.

3. Rural Property (CVR-4)

No description is provided in the draft May 2008 Ecological Land Classification for Southern Ontario.

The Rural Property ELC applies to the retained lands. It includes the existing residence, garage and barn-like building that is currently being used as a wood shop. This area contains poplars, apple trees, White Pine, Eastern White Cedar (*Thuja occidentalis*), Black Locust (*Robinia pseudoacacia*), and Crack Willow (*Salix* × *fragilis*).

A small barn structure occurs within the retained lands directly north of the northern limit of the proposed severance. The small barn-like structure has been converted into a wood shop and no longer serves as a barn. ORE staff inspected this building for mudnests as Barn Swallow was observed on the adjacent parcel to the east. No mudnests were observed on this structure.

None of the proposed severance development is proposed to occur within this habitat. It will remain unaffected in the retained lands.

Wetland and Shoreline Riparian Communities:

4. Mineral Thicket Swamp (SWT2)

According to the ELC, a Mineral Thicket Swamp must contain greater than 25% tree and shrub cover and be dominated by hydrophytic tree and shrub species. It can experience variable flooding regimes and would possess 20% or more vernal pooling. During drought periods in the summer, the vernal pools can be dry.

This habitat occurs between the cultural meadow upland area, where a future residential development would be located, and the lakeshore habitats associated with Lake Ontario.

This habitat contains both Willow species (*Salix discolor and Salix petiolaris*) and Red-osier Dogwood (*Cornus sericea*). The groundcover in this community is dominated by Reed Canary Grass (*Phalaris arundinacea*). ORE observed some sedge species such as Fringed Sedge (*Carex crinita*), Lake Bank Sedge (Carex lacustris), and Fox Sedge (*Carex vulpinoidea)*.

There is an approximately 1.5 m wide existing trail that occurs within this habitat that has been historically used to access the Lake Ontario waterfront area. The trail occurs within a naturally elevated area through the thicket to access the corresponding SBTD1-1 and SHOR2 habitats along Lake Ontario.

The proposed severance will include all of this community.

5. Cattail Mineral Shallow Marsh (MAS2-1)

According to ELC, the Cattail Mineral Shallow Marsh (MAS2-1) primarily possesses less than 25% tree and shrub cover while hydrophytic emergent macrophyte cover must be greater than 25%. Parent mineral substrates often consist of sand, gravel or cobble. Shallow marshes tend to have water up to 2 m deep.

The MAS2-1 community occurs as inclusions within the SWT2 community described above. It also becomes more prominent to the northwest and west of the treed swamp areas (discussed next) associated with the beach deposits along the waterfront.

The severance is proposed to include this marshland community.

6. Cottonwood Treed Sand Dune Type (SBTD1-1)

The ELC (2008) describes SBTD1-1 as an environment where tree cover varies from scattered and clumped to more continuous cover. This ecosite tends to contain rolling sand hills formed by shoreline and aeolian processes, and is restricted to the near-shore areas of the Great Lakes in 6E and 7E. The substrate is mostly stable, allowing some tree species to become established, with little accumulation of organic materials and low nutrient availability. It is also subject to drought and temperature extremes.

This habitat occurs along the lakeshore where the sand deposits have accumulated over the years. The dominant tree species observed within this community is Eastern Cotton-wood (*Populus deltoides*). There were some minor accumulations of leaf-litter, however, there was no topsoil layer in this area. It occurs between the lakeshore and the Swamp Thicket/Cattail Marsh habitats described above.

There is an approximately 1.5 m wide existing trail that occurs within this habitat that has been historically used to access the Lake Ontario waterfront area.

7. Mineral Open Shoreline Ecosite (SHOR2)

This ecosite posssess plant cover that varies from patchy and barren to continuous

herbaceous meadow towards the edge of the unconsolidated materials. The unconsolidated mineral substrates consist of soil materials <2 mm diameter (e.g. sands, loams, silts, and clays).

In this instance, the shoreline ecosiste contains fine to medium sands with a minor amount of gravel interspersed within finer mineral substrates. There are large bedrock "float" pieces in the shallow areas of the lake, suggesting bedrock is near or at surface.

According to the mapping, the severance will include the Mineral Open Shoreline area on the subject property.

8. Open Aquatic (OAO)

The ELC (2008) describes OAO as an environment containing no macrophyte vegetation and no tree or shrub cover. This ecosite tends to be dominated by plankton and has a lake trophic status.

The OAO corresponds to the part of Lake Ontario that occurs on the property. The lake lacks aquatic vegetation as it is constantly being reworked by wind and wave action. ORE staff also observed bedrock floats/blocks further out in the lake which likely suggesting bedrock conditions are not much deeper. However, ORE staff did not observe any bedrock shelves/escarpments further out past the sandy sediments.

According to the severance boundary, a portion of the proposed severance will occur within this aquatic community as the property boundary extends into Lake Ontario. It is possible that when the original survey of the property was completed, the lake level was lower, and the southern boundary was further out and dry at the time of surveying.

5.4 Fauna

5.4.1 General

Although targeted searches for SAR were conducted as part of this study, all faunal species identified during the site inspection were recorded. The list of faunal species observed at the site is presented in Appendix F. Relevant observations of faunal activities on and adjacent to the site are briefly discussed below.

5.4.2 Species At Risk Fauna

NHIC

The NHIC identified Bobolink, Eastern Meadowlark, Henslow's Sparrow, Least Bittern, Midland Painted Turtle, and Snapping Turtle in the vicinity of the subject site. The site does not possess suitable habitat for the Bobolink as it is a very small open field/meadow area. However, Eastern Meadowlark was overheard on the property directly west of the subject site during the inspection. The marshy habitat associated with the PSW (not the unevaluated wetland shallow ephemeral pools) is good quality habitat for the Least Bittern, Midland Painted Turtle and Snapping Turtle. Midland Painted Turtle was observed within the PSW marsh habitat from Beach Drive further east of the subject property. ORE staff presumes the Snapping Turtle has been observed along Beach Drive in the past as there was evidence of nesting in the shoulder of the roadway in the area of the open water channels east of the subject site.

OBBA

Among those SAR detected within the 10 km square area during the Breeding Bird Atlas surveys, the SAR that could most likely be associated with the subject site would be the Barn Swallow. Eastern Meadowlark was overheard on the adjacent parcel directly west of the subject site and observed to be flying to the agricultural lands to the northeast of the subject site. Barn Swallow was observed flying overtop the property to the east of the subject site. ORE staff inspected the buildings on-site and did not observe any mudnests. ORE presumes the Barn Swallows were foraging overtop of the field on the large acreage to the east. None of these SAR were detected directly on-site during the site inspection. Regardless, mitigation should apply to preserve the habitat of these agricultural related species.

ORE staff observed/detected Chimney Swift flying overtop of Brighton and Presquile Provincial Park, however, this is a kilometer or more to the east of the subject site. It is believed the Chimney Swift likely nests directly within the park or settlement area of Brighton and does not utilize the subject site.

The avian site inspections were completed on May 5th, 2023, which was the ideal time to detect avian SAR, as they would be migrating to Ontario after the fall/winter season. None of the other SAR listed within the OBBA were detected during the 2023 survey. The majority of avian SAR in the OBBA are birds that would occur on farm habitats or marsh habitats in the general area of the subject property. The site possess both wetland/marsh and minor open field/meadow type habitats.

eBird

ORE staff detected both Eastern Meadowlark and Barn Swallow and these have been discussed above in the NHIC and OBBA sections. Bald Eagle is the only additional species in the eBird list and ORE staff did not detect this species during the surveys.

No stick nests were observed on the subject site. Therefore, Bald Eagle does not appear to nest on or near the proposed severance lot. However, it is possible Bald Eagle may forage and perch atop the trees on-site overlooking Lake Ontario from time to time. Therefore, the subject property could represent foraging and perching SWH for Bald Eagle.

iNaturalist

Monarch and Piping Plover are the only SAR reported in the iNaturalist database. The Piping Plover occurrence was in May 2022 (a relatively recent sighting) and is the nearest occurrence. Piping Plover's prefer beach shore areas to nest within. The location of the occurrence appears to be within a woodland, which is unlikely. It is likely it was observed along the Lake Ontario beach shore as it lines the majority of the shoreline all the way over to Presquile Provincial Park. This species has also been detected directly within Presquile Provincial Park and nested within the west beach area in recent years. ORE staff presume the nesting area is within this beach and the Piping Plover sighting towards the subject site area was possibly a newly landed Piping Plover. The early spring season May 2022 date would suggest this.

As for Monarch, this species was observed in the area of Barnes Road and Beach Drive to the west of the subject site. The Monarch was detected in August 2017, however, this species would land in the Presquile area during migration across Lake Ontario and due to the agricultural and marsh habitats, both Common Milkweed and Swamp Milkweed could be present. ORE presumes Monarch could be on the property anytime throughout the growing period.

ORE staff note that Eastern Meadowlark was observed/detected several times in the area of Huff Road which has some very large agricultural fields, some of which appear to be hayfields (Google Earth). It is possible that the Eastern Meadowlark detected adjacent to the subject property could be associated with the farm areas on Union Road or Huff Road.

Neither Bushy Aster nor Great Egret were observed on-site during the inspections. Therefore, the development would not displace either of these species or their habitats.

5.4.3 Herptiles

ORE staff targeted downed logs and other woody debris to detect herptiles such as snakes and lizards within the proposed severance and immediate adjacent lands. No lizards or snakes were observed on-site.

The only lizard in Ontario is the Common Five-lined Skink (*Plestiodon fasciatus*). This species prefers woodlands and rock barren communities. It will use downed woody debris, leaf litter and rock crevasses to migrate within the woodland and along the waters edge. Five-lined Skink has not been detected in Brighton/Presquile Point area location and the subject site does not contain suitable habitat. Five-lined Skink was not observed during the inspections.

Snakes tend to be habitat generalists other than with respect to their hibernaculum. Snakes have an affinity for their hibernaculum and will return each year to the same location. However, for the remainder of the year, they migrate significant distances to reduce competition within the species and form foraging circuits. No snake species were observed on the subject site.

The nearest hydrological feature is the PSW/unevaluated wetland/Lake Ontario shoreline habitats which occur in the southern portion of the subject property. The local wetland-types and Lake Ontario did not contain any turtles during the May 5th site inspection period. The only SAR turtle species detected in the area were within the open channels of the PSW to the west of the subject site and observed from Beach Drive. During our inspection, there was no evidence of nesting turtles along the beach shore or the upland cultural meadow, such as digging or egg shells. ORE staff did observe nesting sites in the roadside along Beach Drive further west of the site where the open channels are present.

Although no rare amphibian or turtle species were observed directly within the wetland areas on-site, it represents a Significant Wildlife Habitat with respect to these two (2) herptile species (Appendix F).

5.4.4 Mammals

The NHIC search did not indicate the presence of SAR mammals in the general area and none were observed during the site inspections. A list of detected mammals within the study area is presented in Appendix F.

The proposed severance does not contain woodland that would represent bat maternity habitat (i.e., SWH for bat species). Therefore, no bat snag surveys were completed and no detectors were installed on-site. ORE staff did not complete a bat snag survey as this has to be carried out under leaf-off conditions as per the MNDMNRF bat snag

assessment protocol.

5.5 Species at Risk Flora

ORE completed a thorough search for Butternut trees within 50 m of the proposed severance area. No Butternuts were observed.

ORE staff searched the flora on the proposed severance lot and immediate adjacent lands utilizing binoculars. No Species at Risk flora was observed either on-site or within the immediate adjacent lands. A full list of species observed is in Appendix F.

6.0 Significant Wildlife Habitat Assessment (SWH)

The assessment of SWH is divided into five (5) broad categories, consisting of Seasonal Concentration Area of Animals; Rare Vegetation Communities; Specialized Habitat for Wildlife; Habitat for Species of Conservation Concern (other than Endangered or Threatened), and Animal Movement Corridors. A summary table is provided in Appendix G indicating the potential for SWH to occur based on the criteria provided by the MNDMNRF and whether the site has suitable habitat and/or species occurrences. The following provides a discussion of areas deemed to be confirmed SWH (based on the MNDMNRF criteria) and as indicated in Appendix G.

The potential SWH for the proposed severance and immediate surrounding lands is summarized below:

- Waterfowl Stopover and Staging Areas (Terrestrial);
- Waterfowl Stopover and Staging Areas (Aquatic);
- Shorebird Migratory Stopover Area;
- Migratory Butterfly Stopover Areas;
- Sand Barren;
- Waterfowl Nesting Area;
- Bald Eagle and Osprey Nesting, Foraging and Perching Habitat;
- Woodland Raptor Nesting Habitat;
- Marsh Breeding Bird Habitat;
- Turtle Nesting Areas; and
- Special Concern and Rare Wildlife Species

Among the SWH listed above, the Sand Barren, Waterfowl Stopover and Staging Areas (Aquatic), Shorebird Migratory Stopover, Waterfowl Nesting Area, Bald Eagle and Osprey Nesting, Foraging and Perching, Marsh Breeding Bird and Woodland Raptor Nesting SWH would be associated with the PSW/unevaluated wetland/Shoreline-Riparian habitats on-site.

As for the Turtle Nesting and Special Concern SWH, these would be associated with the on-site cultural field habitats, upgradient of the KHF.

ORE staff detected one (1) Special Concern species on the adjacent parcel to the east - Barn Swallow. The open field habitats resembling hayfields represent potentially suitable habitat with respect to the Barn Swallow. Consequently, even though we did not detect the Special Concern species directly on the subject site during the surveys, an attempt should be made to preserve as much of the habitat as possible for the above-mentioned avian species.

Turtle nesting could occur on the subject site, however, there was no evidence of nesting activities along the edge of the upland/wetland habitats. Even though the site contains the habitat, turtles do not appear to be taking advantage of this setting.

No development is proposed to occur within the KHFs/Lake Ontario Shoreline habitats south of the ORE delineated wetland boundary. Therefore, it should be possible to avoid all of the SWH associated with these features.

Mitigation for SWH is provided in the 2014 Significant Wildlife Habitat Mitigation Support Tool. Mitigation is provided in the following sections and has regard for the tools outlined for Ecoregion 6E.

A brief description of the confirmed SWH on and immediately adjacent to the property is provided in Appendix G.

7.0 Impact Assessment and Recommended Mitigation

7.1 General Impact Considerations

The proponent would like to sever one (1) lot from the subject site. It is expected that the proposed development will be targeted within the upland cultural meadow habitat in the northern portion of the property (Figure 7).

As described above, the Key Natural Heritage Features (KNHF), Key Hydrologic Features (KHF), Species at Risk (SAR) Habitat and Significant Wildlife Habitat (SWH) have been thoroughly examined as part of this *s*NHE. Those features are briefly summarized below:

- The Hunt and Beach Road-Popham Bay PSW/small unevaluated wetland comprised of swamp thicket and cattail marsh was identified in the mid to southern portion of the property. Lake Ontario occurs to the south and although it contains a beach barren upland type area, it is completely surrounded by wetland. The only upland area on the proposed severance lot occurs within the

cultural meadow in the northern portion of the severance. ORE staff delineated the boundary of the wetland feature and a 30 m setback has been applied to the PSW/unevaluated wetland feature's boundary, which is illustrated on Figure 7.

- The proposed severance area would include all of the PSW/unevaluated wetland and shoreline KHFs. The retained lands would be comprised of rural property area and contain no KHFs/KNHFs. ORE staff presume that a proposed residential development (if the severance is approved) would be constructed in the area north of the 30 m VPZ, within the open country cultural field area. The wetland area is designated as an Environmental Protection - Provincially Significant Wetland under the County's Schedule B mapping. The delineated area was incorrectly mapped on Schedule B.

  The boundary of the Provincially Significant Wetland has been adjusted/revised on Figure 7. Everything south of the ORE wetland boundary pertains to KHF and Lake Ontario Shoreline SWH, which should become part of the County's NHS area once the mapping is complete. Everything north of the wetland boundary is considered open space and should be developable, provided it meets the criteria for a lot under the OP requirements.

- ORE staff conducted the avian surveys during the May 5th site visit during the early spring season migration period to identify/confirm the presence of SAR avian on the subject site. According to our site inspection and background data review, the local agricultural, wetland and Lake Ontario shoreline settings are potential habitat for a variety of SAR avian.

  The site more resembles a cultural/rural property setting than a contiguous agricultural setting, hence the identification/detection of the Eastern Meadowlark and Barn Swallow SAR birds on the adjacent parcels east and west of the subject site. Therefore, mitigation should be applied to retain and protect the habitats/species as needed.

- The site contains SWH for Sand Barren (rare shoreline community), Waterfowl Stopover and Staging Areas (Aquatic), Shorebird Migratory Stopover, Waterfowl Nesting Area, Bald Eagle and Osprey Nesting, Foraging and Perching, Marsh Breeding Bird and Woodland Raptor Nesting SWH associated with the PSW/unevaluated wetland/Shoreline-Riparain habitats on the subject site. As for the on-site SWH, the cultural meadow, where presumably a future development could be located, represents both Turtle Nesting Areas and Special Concern and Rare Wildlife Species SWH. The SWH is summarized in tabular format in Appendix G.

- A Threatened and Special Concern species were identified utilizing the adjacent neighbouring lands to the east and west of the subject site - Eastern Meadowlark and Barn Swallow, respectively. The combination of old field, wetland marsh areas and farm-like settings adjacent to the site would appeal to both the Eastern Meadowlark and Barn Swallow. However, neither species was observed nesting on the subject site.

  The Eastern Meadowlark came to the property boundary within the conifer fencerow/hedgerow and called; it did not fly to the tallgrass. Males will often land after crossing Lake Ontario along the shoreline and distribute to good quality nesting site habitats. It is ORE's opinion that the Eastern Meadowlark detected by ORE staff had landed and was calling for like Meadowlarks. A few August sightings of Eastern Meadowlark along Huff Road and Union Road, suggest this species likely bred, nested and fledged young in these locations.

  As for the Barn Swallow, this species was observed foraging within the open field areas to the east of the subject site. The combination of buildings and Lake Ontario waterfront, is an ideal setting for this species. ORE staff inspected the on-site buildings and none had mudnests or smears. The small barn-type building has become a wood-working shop and is no longer being used for livestock. Therefore, mitigation should be in the form of maintaining the overall setting for these two (2) agricultural field related species.

The following sections provide further details on potential impacts that could occur as part of the proposed development. Also included below are specific recommendations for avoiding negative impacts to the features listed above.

7.2 Hydrological Features

7.2.1 Potential Impacts

The site contains Key Hydrological Features (KHFs) within the majority of the southern portion of the property. Once a 30 m VPZ is applied, a suitable building envelope occurs outside of the KHF and VPZ, as illustrated on Figure 7.

Based on our assessment, it is expected that potential impacts to the KHF could include the following:

a) Development within an area that could hinder or deter runoff flows to the Hunt and Beach Road-Popham Bay PSW/small unevaluated wetland.

b) Sedimentation/erosion of materials from a future single residential development being directed to the KHF during the construction/alteration

period and/or post-construction periods.

c) Clearing of tallgrass that buffers the wetland/Lake Ontario Shoreline habitats and potentially fragmenting the shoreline wildlife corridor directly adjacent to the KHF.

d) Excessive clearing or impacts by future property owners on the severed lot.

e) Introduction of invasive/exotic weeds entering the woodlands during the construction period. The weeds could be introduced via unclean construction equipment and/or within any fill materials.

f) Excavation into or short-circuiting natural shallow groundwater flows, resulting in water quality and quantity changes, potentially impacting the downgradient Hunt and Beach Road-Popham Bay PSW/small unevaluated wetland .

7.2.2 Recommended Development Mitigation

To mitigate against the potential impacts described above and to maintain the integrity of the KHF, a 30 m Vegetation Protection Zone (VPZ) has been proposed off the limit of the ORE defined Hunt and Beach Road-Popham Bay PSW/small unevaluated wetland. The purpose of the VPZ is to establish an uninterrupted vegetation swath between the proposed building envelope and the Key Hydrological Feature that will mitigate the above-mentioned potential impacts.

The 30 m VPZ for this feature is illustrated on Figure 7.

The establishment of the VPZ around this feature satisfies the following general requirements:

- Setback requirements specified by Northumberland County and the Township of Cramahe Official Plans, and

- In all cases, meeting or exceeding the setbacks outlined in the Lower Trent Conservation Authority's Ontario Regulation 163/06.

The recommended VPZ illustrated on Figure 7 easily satisfies the requirements of all the agencies.

An existing trail occurs through the wetland that accesses the shoreline dune/sand barren habitats of Lake Ontario. If the parcel is severed, the new property owner would have continued use of this existing trail access to the shoreline. The 30 m VPZ would

not prevent the use of this access.

7.3 SAR Fauna

7.3.1 Potential Impacts to Avian SAR

Based on our review of the various background databases (NHIC, OBBA, eBird and iNaturalist) and our site inspection, the agricultural related SAR avian would be the main concern in regards to the subject site. It is our opinion the Eastern Meadowlark and Barn Swallow sightings could occur in the area and may be impacted by a development on the subject site. We recognize that other avian SAR could also find the wetland and surrounding agricultural areas to be attractive habitat. However, no development or future residential areas will displace or impair these habitats.

The Eastern Meadowlark and Barn Swallow are listed as Threatened and Special Concern by SARO. Only the Eastern Meadowlark is protected under the ESA. Descriptions of each bird and their habitat is provided in Appendix B.

7.3.2 Recommended Mitigation for Eastern Meadowlark

It was determined through the inspections on May 5th, 2023 that the Eastern Meadowlark overheard on the property to the west and then observed/overheard along the conifer fencerow/hedgerow along the western edge of the property, was not nesting on-site. It was a single male that had likely just landed on the shore of Lake Ontario and was calling to attract other Meadowlarks. The calls diminished after an hour or two at the site. Therefore, the subject property does not appear to be used by Eastern Meadowlark. As such, protective measures regarding habitat should not apply. Consequently, the measures to protect the individual should be implemented as part of this *s*NHE.

To mitigate impacts to Eastern Meadowlark, the Migratory Bird Convention Act's requirement to prevent clearing of vegetation during the breeding/migratory bird period should apply. No vegetation shall be cleared between April 1st to August 31st each year. This should deter Eastern Meadowlark from being disturbed by heavy equipment during this period, so that it can establish itself in nesting habitat in the early spring period. The subject property could be utilized for foraging by this species, and the thicket swamp and 30 m of the cultural field will be protected via the 30 m VPZ for foraging birds in the area, including Eastern Meadowlark. The conifer fencerow/ .hedgerow will be retained by the lot owner as it appears Eastern Meadowlark utilizes the tall trees in this feature to broadcast its call.

Protecting a 30 m swath of the old field habitat, the thicket swamp, and the Lake

Ontario shoreline in a natural state, in their entirety, will retain the functionality of the property with respect to the Eastern Meadowlark. A single residential development in the very northern portion of the proposed severance will not displace nor disrupt the form of the breeding/nesting habitat of the Eastern Meadowlark.

7.3.3 Recommended Mitigation for Barn Swallow

Special Concern species are covered under Index 13 in the Significant Wildlife Habitat Mitigation Support Tool (SWHMiST). The SWHMiST's primary mitigation measure is to avoid the habitat of the Special Concern species.

ORE staff inspected all of the buildings for Barn Swallow mudnests and/or smears from previous years. None were observed, therefore, this species is not nesting on-site. It is possible this species may utilize the swamp thicket, cattail marsh and Lake Ontario shoreline areas to forage. These will be retained (including a 30 m swath of the cultural field) and protected on-site by the recommended 30 m VPZ. Consequently, all of the foraging habitats will be retained by locating the building envelope within the existing cultural field in the northern portion of the proposed severance, which would be beneficial to the Special Concern species. The Barn Swallow was observed gleaning insects on the adjacent parcel to the east which contains open country/meadow habitat, ORE staff was unable to locate the nesting sites of the Barn Swallows on this property. Protecting a 30 m swath of the old field habitat, the thicket swamp, and Lake Ontario shoreline in a natural state in its entirety, will retain the functionality of the property with respect to Barn Swallows.

7.4 SAR Flora

ORE staff conducted thorough searches of the on-site wooded areas and surrounding woodland edges within 50 m of the property limits to detect Butternut (*Juglans cinerea*). None were identified.

No other SAR Flora were identified on-site during the surveys. Therefore, no action is necessary and no mitigation has to be applied to the site with respect to any SAR Flora.

7.5 Significant Wildlife Habitat (SWH)

7.5.1 General

Based on the tabulated assessment of SWH included in Appendix G, the SWH that occur directly on the subject site have been narrowed to Turtle Nesting Areas and Special Concern and Rare Wildlife Species SWH. The remaining SWH would be

associated with the wetland and Lake Ontario shoreline habitats, which for all intents and purposes are protected KHFs and includes a 30 m VPZ. The protection measures and VPZ go beyond the requirements of the SWHMiST and would ensure the long term use of the habitat by wildlife.

There is the potential for invasive and exotic species to enter the development area during the construction period which could impact the SWH. A recommendation to mitigate impacts from invasive/exotic species is provided in the recommendations section below.

7.5.2 Nesting Turtle Areas SWH

This type of SWH would be associated with the cultural meadow area directly upgradient and adjacent to the thicket swamp and cattail marsh habitats identified on Figure 4.

According to the SWHMiST Index #28, the following shall be applied to any residential or commercial developments proposed within this SWH:

"*Development will not be permitted within the SWH unless it can be demonstrated that there will be no negative impacts on the feature or its ecological function (MNRF 2014).*."

It is ORE's opinion that the 30 m VPZ will protect the immediate upland swath within the cultural meadow habitat that would be potential Turtle Nesting SWH. Therefore, any turtles that want to nest within the VPZ could do so unharmed and within suitable habitat as described under the Significant Wildlife Habitat Ecoregional Criteria Schedules: Ecoregion 6E, thus complying with the primary avoidance measures described in the SWHMiST.

There is the potential for turtles to migrate towards the construction area if there is an abundance of denuded unconsolidated soil conditions on-site during the nesting period. To prevent turtles from nesting within the construction area during this period, the property owner or contractor should install a Heavy-duty silt fence (Appendix H) along the entire 30 m VPZ. Heavy-duty silt fence is considered a turtle exclusion fence by the province, light-duty silt fence is not[2]. The heavy-duty silt fence contains the wire backing which makes it more stable/sturdy with respect to species such as Snapping Turtle. According to the SAR prescreening, Snapping Turtle may occur within the PSW.

In addition to the old field meadow being potential nesting SWH, the beach shore along the waterfront would also be SWH for nesting turtles. The shoreline habitats of Lake

[2] MECP - Reptile and Amphibian Exclusion Fencing Best Management Practices.

Ontario are part of the habitat protected by the KHFs identified on-site, therefore, will be retained and not impacted by the proposed development.

No further mitigation is necessary in regards to Turtle Nesting Areas SWH.

7.5.3 Special Concern and Rare Wildlife Species Habitat

The habitat was identified for one (1) Special Concern species of bird on the neighbouring property to the east:

- Barn Swallow

The SWHMiST provides the following mitigation under Index #37:

"*The best mitigation is to avoid affecting the habitat of Special Concern and S1, S2 and S3 species. When complete avoidance is not possible, mitigation will necessarily be site specific depending upon the nature of the development and the species involved.*"

The Barn Swallow mitigation is already discussed above. As discussed, avoidance is the primary mitigation measure in the SWHMiST, considering the subject property does not contain the Barn Swallow's nesting habitat, the primary habitat will be avoided, and meet the SWHMiST requirement.

8.0 Consolidated Conclusions and Recommendations

The following is a brief summary of our conclusions and recommended mitigation for the proposed severance, as outlined in detail in the previous section.

8.1 Based on our findings, it is our conclusion that the severance development could occur within the northern upland portion of the severance (within the cultural meadow) on the property, subject to the recommendations provided in this report and as illustrated on Figure 7. Other constraints may also be imposed through Planning requirements. These conclusions and recommendations have been based on the available protocols and policy documents available as of the date indicated on this report.

8.2 The principal Key Hydrologic Features (KHF)/Key Natural Heritage Features (KNHF) have been identified on-site. These include Significant Wildlife Habitat (SWH), the Hunt and Beach Road-Popham Bay PSW/small unevaluated wetland, and the presence of Eastern Meadowlark (Threatened species), and Barn Swallow (Special Concern species) observed on the neighbouring parcels to west and east of the subject site, respectively.

The protection and avoidance measures in the previous section should be incorporated into the development agreement for the proposed single lot severance.

8.3 As illustrated by Figure 7, a 30 m Vegetation Protection Zone (VPZ) has been applied to the on-site Hunt and Beach Road-Popham Bay PSW/small unevaluated wetland, as this is the primary hydrological constraint on the property. Consequently, the proposed development would satisfy the requirements of the Growth Plan for the Greater Golden Horseshoe, the County and Township Official Plans, the Provincial Policy Statement (PPS), and LTC's Regulation regarding Interference and Alterations to Waterways.

8.4 The County of Northumberland did not adopt the Growth Plan NHS with respect to identifying their KNHFs. The County produced their own NHS (currently under review). The draft NHS does not contain any published mapping of Natural Heritage Features (NHF), yet. Schedule B in the current Official Plan identifies the PSW on the south side of the subject property as a PSW (EP designation under Schedule A) and the provincial mapping (Land Information Ontario - LIO) illustrates a similar mapped boundary. It has been determined by ORE staff that the mapping is incorrect. Figure 7 illustrates the revised limit/boundary of the wetland areas on the subject parcel. It is similar to the wetland mapping as identified by Lower Trent Conservation Authority staff during their meeting with the proponent.

According to the County's draft OPA, the standard 30 m VPZ is assumed to apply to PSWs and Unevaluated wetlands. The remaining areas mapped as CUM1 on Figure 4 are not considered wetland and not subject to the provincial Growth Plan requirements.

The combination of environmental mitigation measures outlined in this *s*NHE (including the VPZ) shall preserve the cultural old field/meadow buffer between the wetland and the single residential building envelope within the proposed severance.

Provided the VPZ and the mitigation measures outlined in this report are adhered to, the form and function of all of the on-site wetlands and shoreline areas associated with Lake Ontario, will be maintained.

8.5 Two (2) SAR birds were identified during the single site inspection. The Eastern Meadowlark is a Threatened species and is subject to both the PPS/OP policies and/or the Endangered Species Act (ESA) policies. The 2nd SAR bird species is Barn Swallow which has a status of Special Concern in Ontario. It is not subject to the ESA nor OP policies, but instead, garners mitigation from the SWHMiST.

It was determined during the surveys that the Eastern Meadowlark was not nesting on-site nor was it foraging in suitable habitat. It came to the conifer fencerow/hedegrow

along west edge of the subject property, called a few times, then flew north. Therefore, protection measures under the ESA would only extend to protecting the individual as the cultural meadow appears to be unused by this threatened species. Appropriate measures have been recommended to protect this species during the Migratory period.

ORE staff reviewed the mitigation/conservation requirements under the SWHMiST in regards to the Barn Swallow, as Special Concern species habitat is considered to be SWH in all ecoregions.

According to the SWHMiST, the primary mitigation measure is to avoid the SWH. The next best measure is to reduce the overall footprint of the development within the SWH. ORE staff inspected all the buildings on-site and did not observe any mudnests nor smears suggesting this species is not breeding and nesting on-site. Consequently, the single residential severance development would be able to meet the primary objectives of the SWHMiST and avoid the habitat of the Barn Swallow.

8.6 ORE staff identified a number of other SWH associated with the PSW/unevaluated wetland area and the shoreline of Lake Ontario.

These SWH will also be avoided entirely via the KHF protection measures applied to the wetland habitats and Lake Ontario. A 30 m VPZ is to be applied to the most northerly limit of the PSW, which corresponds to the swamp thicket identified in this *s*NHE. The 30 m VPZ protective setback goes above and beyond the recommendations outlined in the SWHMiST for the SWH associated with the wetland and shoreline environments on-site.

As a means of further protecting the SWH on-site, the contractor or property owner shall adhere to the May 2016 - Clean Equipment Protocol for Industry Inspecting and cleaning equipment for the purposes of invasive species prevention. Implementation of the protocol would ensure those natural areas such as the onsite wetland and shoreline are not impacted by non-native and aggressive species seed (e.g. European Common Reed - Phragmites) that can inadvertently be transported to subject site on construction vehicles.

8.7 Provided the recommendations outlined in this *s*NHE report are adhered to (with specific attention to the details outlined in the previous section), impacts to the KNHF (including SAR birds), KHF and SWH identified on-site should be undetectable.

8.8 Figure 7 illustrates KHF and the 30 m VPZ. A lot layout development plan for the proposed severance was not provided at the time this *s*NHE was prepared. Figure 7 illustrates a conceptual residential (2,500 sq. ft) and private services configuration to

demonstrate that a relatively large sized development can "fit" within the proposed building envelope area, while adhering to the constraints.

If a lot configuration is approved, the proponent should identify, by way of legal survey, the limit of the building envelope on the new parcel. The recommendations in this *s*NHE should form the basis of a Mitigation Measures Agreement between the lot owner and the agencies, prior to a Building Permit being issued.

8.9 The recommendations provided in this report are likely to be incorporated into the Planning application as a set of conditions which are registered with the new lot. It may also become a set of conditions for the Building Permit. It is up to the new lot owner to be sure that all recommended mitigation measures outlined in this *s*NHE are implemented at the site. If the property owner has a Planner, this *s*NHE should be forwarded to their Planner. Failure to implement the mitigation measures could result in unnecessary impacts to the KNHF/SAR/SWH and potentially result in a stop work order or revocation of any permits. Either of the above can result in significant delays to the application.

* end of *s*NHE *

Sincerely,
Oakridge Environmental Ltd.

Rob West, HBSc, CSEB
Senior Ecologist

Selected References

Argus, G.W. and K.M. Pryer. 1982-1987**,** *"Atlas of the Rare Vascular Plants of Ontario*". Four Parts. National Museum of Natural Sciences, Ottawa, Ontario.

Austen, M.J. et. al. 1995. "*Ontario Birds at Risk Program*". Federation of Ontario Naturalists and Long Point Observatory. 165 pp. OBAR website.

Bezener.A. 2000. "*Birds of Ontario*".Lone Pine Publishing.. 376 pp.

Bakowsky, W., 1995. *"S-ranks for Southern Ontario Vegetation Communities".* OMNR, Natural Heritage Information Centre, Peterborough, ON. 11 pp.

Bellrose F.C. 1976. *"Ducks, Geese and Swans of North America".* Stackpole Books

Cadman, M.D. et. al., 2007**,** *"Atlas of Breeding Birds of Ontario"***,** OBBA website, 2nd Edition (2001-2005).

Cheskey, E.D. 1995. *"Towards Conserving Birds of Ontario*". Federation of Ontario Naturalists. 48 pp.

Gill F.B. 2007. *"Ornithology - Third Edition".* National Audobon Society, W.H. Freeman and Company.

Habib, L., Bayne, E. M. & Boutin, S. *"Chronic Industrial Noise Affects Pairing Success and Age Structure of Ovenbirds Seiurus Aurocapilla*." Journal of Applied Ecology 44 (2007): 176-84.

Holmes et. al. 1991. "*The Ontario Butterfly Atlas".* Toronto Entomologists Association, Toronto, Ontario.

Holmgren, Noel H., "*Manual of Vascular Plants of Northeastern United States and Adjacent Canada - Second Edition* ", The New York Botanical Garden, 1998.

Jones et. al. 2008. "*The Dragonflies and Damselfies of Algonquin Park and the Surrounding Area.*" The Friends of Algonquin Park. 263 pp.

Lee, H.D. et. al.. 1998. *Ecological Land Classification for Southern Ontario -First Approximation and it's Application - SCSS FieldGuide; FG-02*. OMNR, North Bay, Ontario.

Lee, H.D. et. al.. 2008. *Ecological Land Classification for Southern Ontario -Second Approximation and it's Application - Ecosystems Catalogue*. Conservation Ontario website.

Newcomb, L., "Nerwcomb's Wildflower Guide". Little Brown and Company(Canada) Limited, 1977.

Oldham, M.J., 1996, "*Natural Heritage Resources of Ontario, Amphibians and Reptiles"* **,**Ontario Herpetofaunal Survey (OHS),, 1996, OHS website contacted August 2012.

Ontario Ministry of Natural Resources and Forestry. 2015. "*Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E*"; Regional Operations Division, Peterborough, Ontario.

Ontario Ministry of Natural Resources and Forestry. 2014. "*Significant Wildlife Habitat Mitigation Support Tool*"; Peterborough, Ontario.

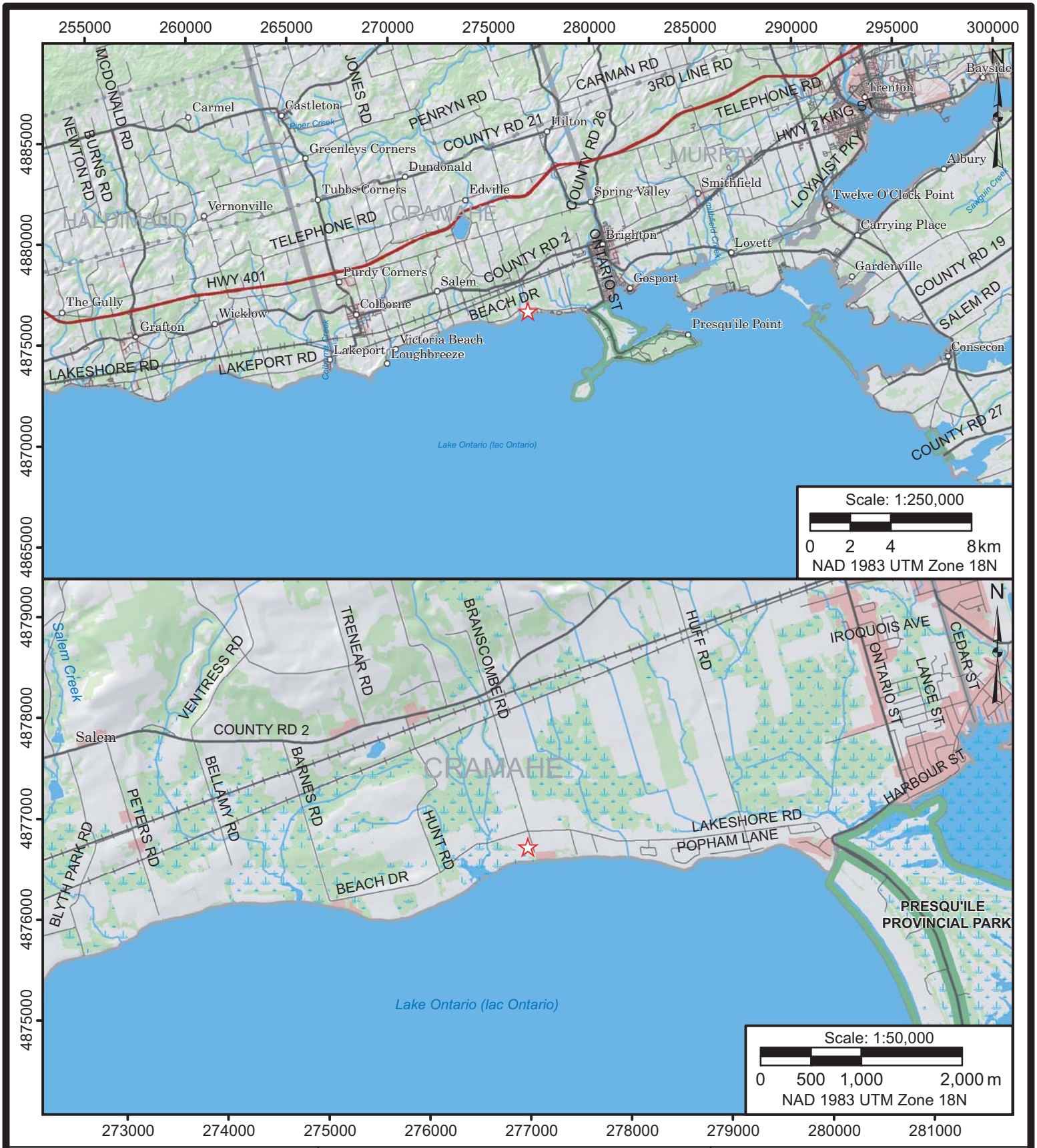
Peck G.K. & James R.D. 1983, "*Breeding Birds of Ontario Nidiology and Distribution Volume 1 : Nonpasserines and Volume 2: Passerines"*. Royal Ontario Museum, Toronto.

Sibley, D.A. 2003, "*The Sibley Field Guide to Birds of Eastern North America*". New York: Alfred A. Knopf.

"**Species at Risk in Ontario List**." Ontario.ca. N.p., November 2015. <http://www.ontario.ca/environment-and-energy/species-risk-ontario-list>.

Voss, Edward G., "*Michigan Flora - Part I to Part III*"; Cranbrook Institute of Science Bulletin 55 and The University of Michigan Herbarium, 1972.

Figures



☆ Approximate Site Location

Notes: Base maps provided by Land Information Ontario and Natural Resources Canada (2023)

Optimized for Oakridge Environmental Ltd. printing

***Scoped* Natural Heritage Evaluation (*s*NHE)**
Proposed One (1) Lot Severance
519 Beach Drive, Lake Ontario
Part of Lot 12, Broken Front Concession
Township of Cramahe,
Northumberland County

ORE
Oakridge Environmental Ltd.
Environmental and Hydrogeological Services

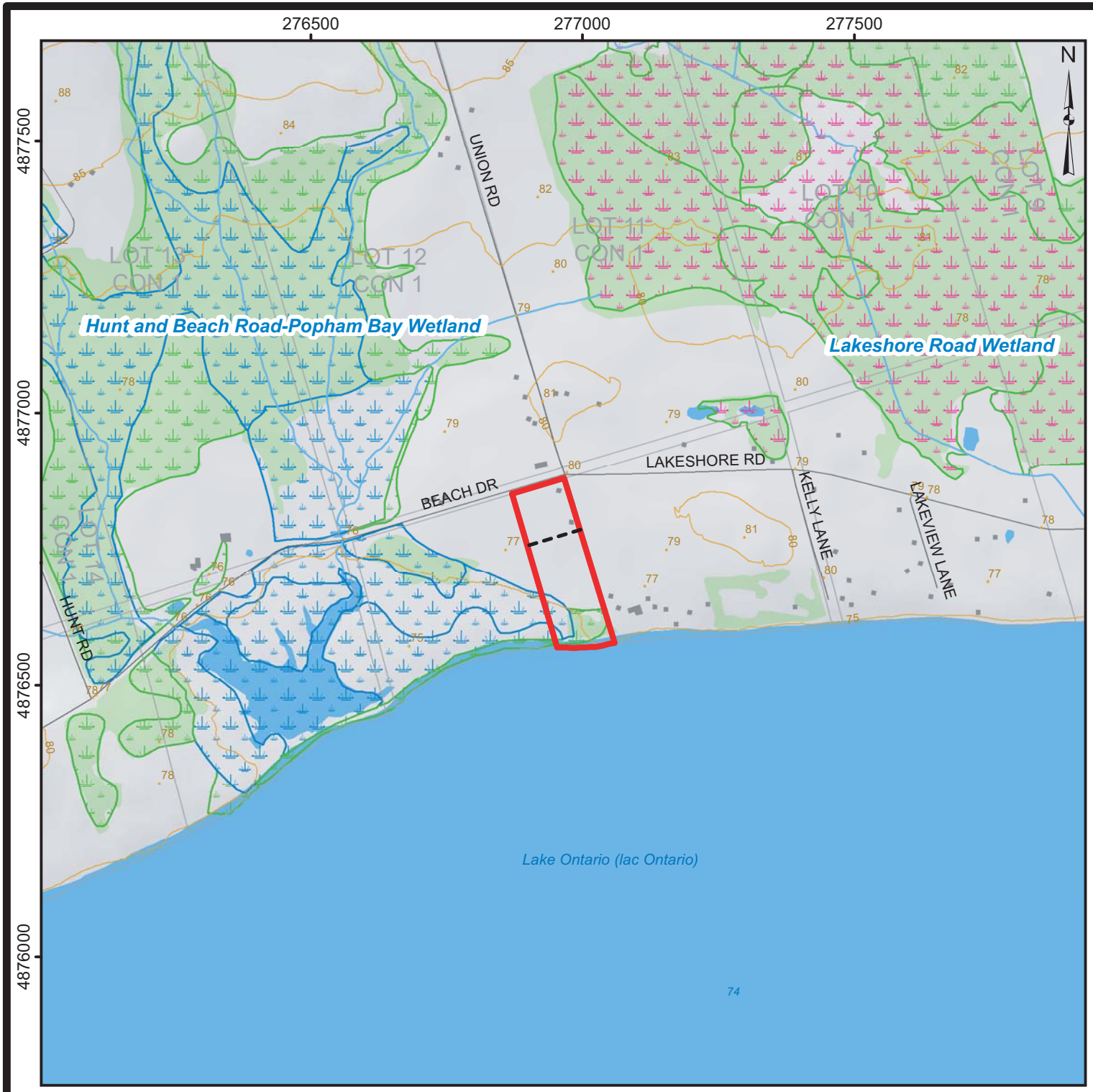
North American Datum (NAD) 1983

TITLE
General Location

PROJECT #
23-3268

DATE
July 2023

FIGURE NO.
1



NAD 1983 UTM Zone 18N

***Scoped* Natural Heritage Evaluation (*s*NHE)**
Proposed One (1) Lot Severance
519 Beach Drive, Lake Ontario
Part of Lot 12, Broken Front Concession
Township of Cramahe,
Northumberland County

- Approximate Property Boundary
- Proposed Severance
- Wooded Area
- Waterbody
- Wetland (Unevaluated)
- Wetland (Evaluated Non PSW)
- Wetland (Provincially Significant)
- Watercourse
- Contour (5m Intervals)
- Spot Height (m asl)
- Building (symbol)
- Building (to scale)
- Road
- Geographic Lot Fabric

Scale: 1:10,000

0 100 200 400 m

Notes: Base maps provided by Land Information Ontario and Natural Resources Canada (2023)

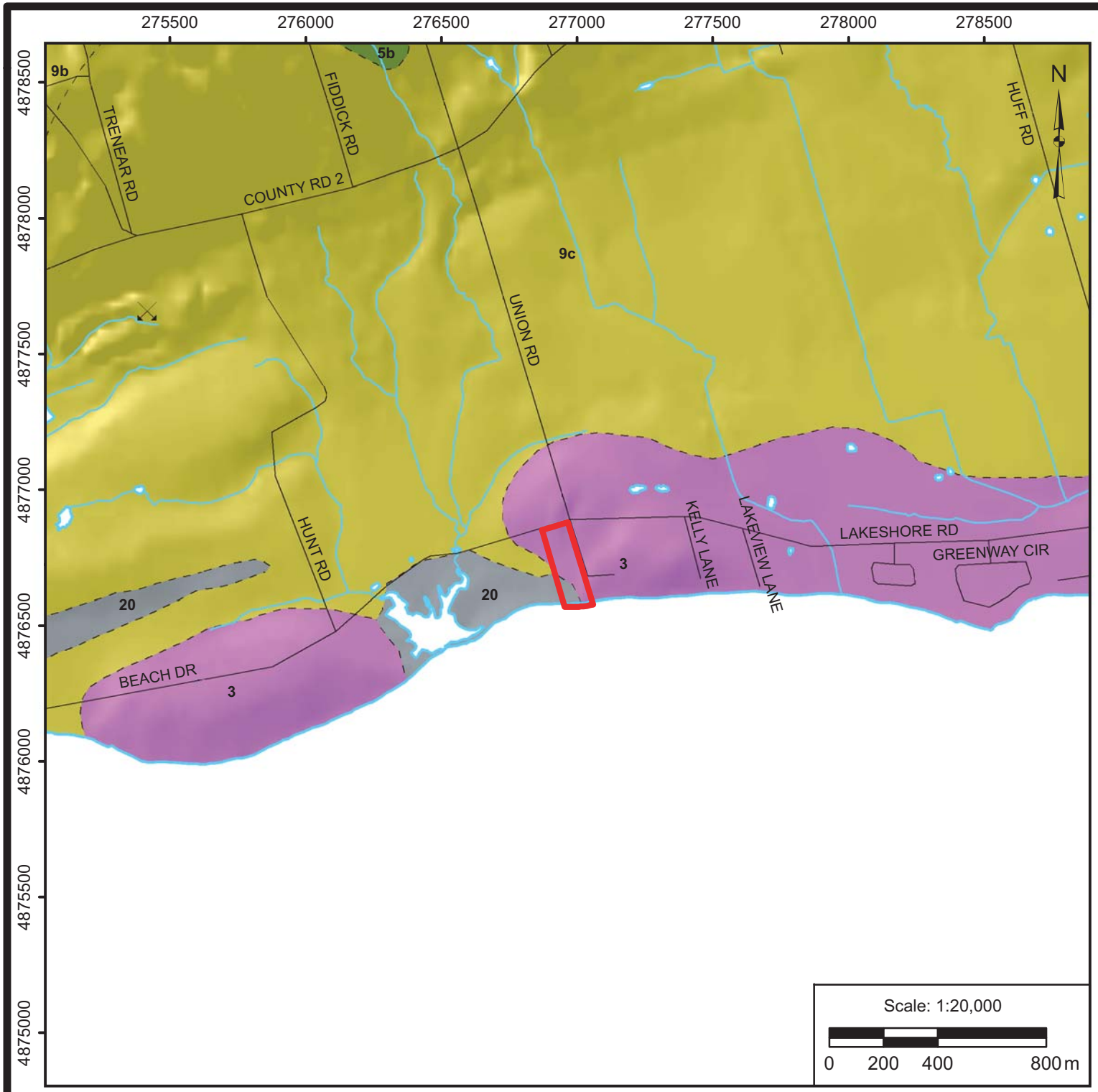
Optimized for Oakridge Environmental Ltd. printing

TITLE

Topography and Drainage

ORE Oakridge Environmental Ltd.
Environmental and Hydrogeological Services

PROJECT #	FIGURE NO.
23-3268	**2**
DATE	
July 2023	



***Scoped* Natural Heritage Evaluation (*s*NHE)**
Proposed One (1) Lot Severance
519 Beach Drive, Lake Ontario
Part of Lot 12, Broken Front Concession
Township of Cramahe,
Northumberland County

- Approximate Property Boundary
- Waterbody
- Watercourse
- Sand and Gravel Pit
- Contact (approximate/assumed)
- 3 — Paleozoic bedrock
- 5b — Glacial Deposits (Till): Stone-poor, carbonate-derived silty to sandy till
- 9b — Coarse-textured glaciolacustrine deposits: Littoral-foreshore deposits
- 9c — Coarse-textured glaciolacustrine deposits: Foreshore-basinal deposits
- 20 — Organic deposits

Notes: Base maps provided by Land Information Ontario and Natural Resources Canada (2023)

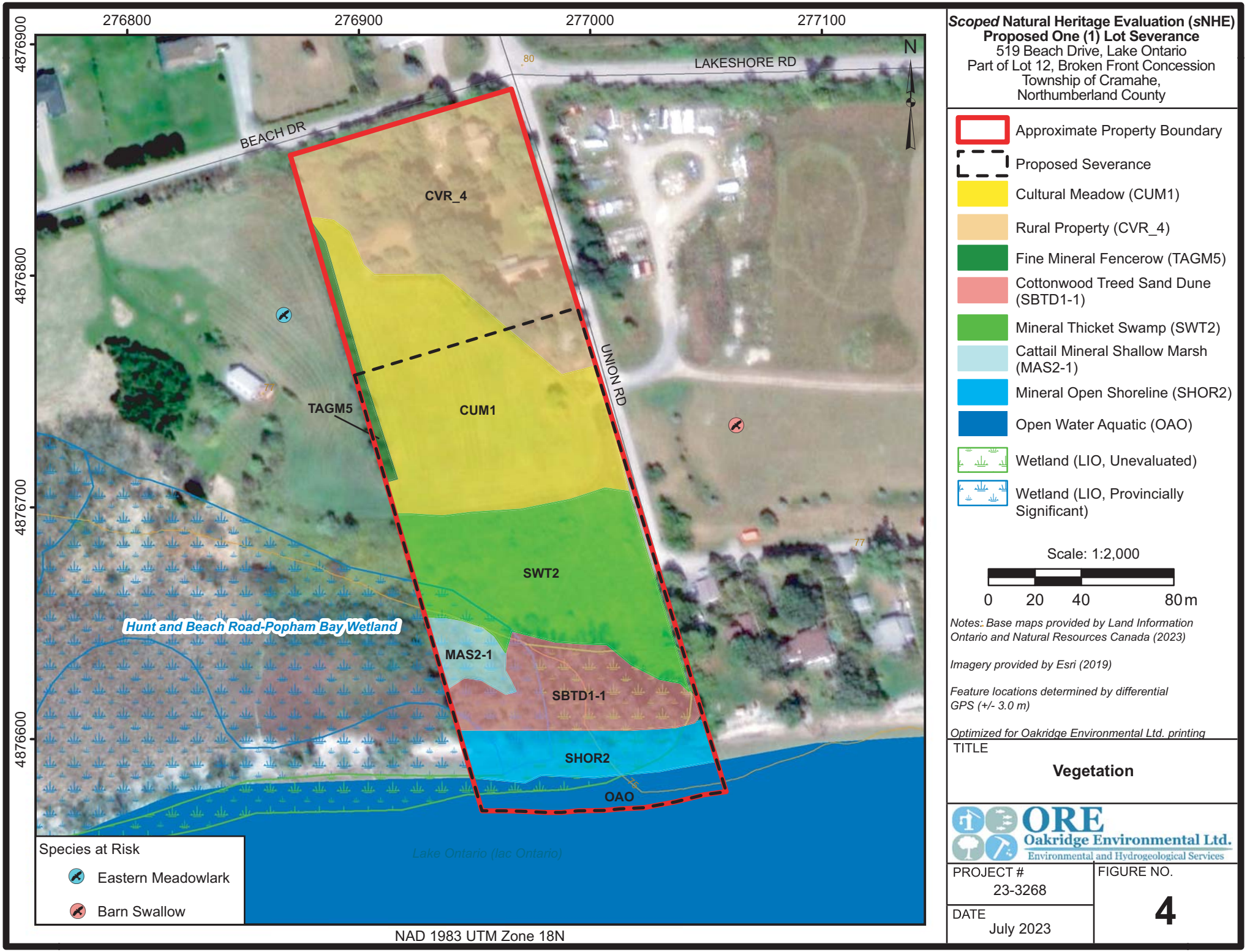
Optimized for Oakridge Environmental Ltd. printing

TITLE

Surficial Geology

ORE Oakridge Environmental Ltd.
Environmental and Hydrogeological Services

PROJECT #	FIGURE NO.
23-3268	3
DATE	
July 2023	



Scoped Natural Heritage Evaluation (sNHE)
Proposed One (1) Lot Severance
519 Beach Drive, Lake Ontario
Part of Lot 12, Broken Front Concession
Township of Cramahe,
Northumberland County

- Approximate Property Boundary
- Proposed Severance
- Cultural Meadow (CUM1)
- Rural Property (CVR_4)
- Fine Mineral Fencerow (TAGM5)
- Cottonwood Treed Sand Dune (SBTD1-1)
- Mineral Thicket Swamp (SWT2)
- Cattail Mineral Shallow Marsh (MAS2-1)
- Mineral Open Shoreline (SHOR2)
- Open Water Aquatic (OAO)
- Wetland (LIO, Unevaluated)
- Wetland (LIO, Provincially Significant)

Scale: 1:2,000

0 20 40 80 m

Notes: Base maps provided by Land Information Ontario and Natural Resources Canada (2023)

Imagery provided by Esri (2019)

Feature locations determined by differential GPS (+/- 3.0 m)

Optimized for Oakridge Environmental Ltd. printing

TITLE

Vegetation

ORE Oakridge Environmental Ltd.
Environmental and Hydrogeological Services

PROJECT #	FIGURE NO.
23-3268	4
DATE	
July 2023	

Photo A (Above): taken looking west along the shoreline of Lake Ontario. The gravel and cobble overlies a predominantly sandy matrix of beach-type sediments.

Photo B (Above): taken looking south from the lawn area towards Lake Ontario (in background). The tallgrass looking habitat in the foreground is the meadow marsh/swamp thicket habitat.

Photo C (Above): taken looking south towards Lake Ontario within the cottonwood stand/beach bar/barren type habitat.

Photo D (Above): taken looking west from within the cottonwood stand along the Lake Ontario waterfront. The soil materials below consist of reworked rounded gravel, cobbles in medium beach sand-type material. Similar to what occurs in previous photos of the on-site beach.

	***Scoped* Natural Heritage Evaluation (*s*NHE)** **Proposed One (1) Lot Severance** 519 Beach Drive, Lake Ontario Part of Lot 12, Broken Front Concession Township of Cramahe, Northumberland County	TITLE **Site Photos**
Photos Taken: May 5, 2023	ORE Oakridge Environmental Ltd. Environmental and Hydrogeological Services	PROJECT # 23-3268 DATE July 2023 FIGURE NO. **5**
Optimized for Oakridge Environmental Ltd. printing		

Photo A (Above): was taken looking northwest from Beach Road where the proposed severance and residential development would be targeted.

Photo B (Above): was taken from the poplar beach barren habitats looking north towards the severance area in the background. This photo is representative of the shallow cattail marsh and swamp thicket habitats identified in the vegetation mapping. There are also sporadic willows that occur within the marsh and thicket communities (greenery in the photo).

Photo C (Above): was taken looking east along the shoreline of Lake Ontario. The gravel and cobble overlies a predominantly sandy matrix of beach-type sediments.

Photo D (Above): was taken looking south along the west property line. In the foreground is an apple tree and in the background red-osier dogwood and willow species in the swamp thicket ecosite.

	***Scoped* Natural Heritage Evaluation (*s*NHE)** **Proposed One (1) Lot Severance** 519 Beach Drive, Lake Ontario Part of Lot 12, Broken Front Concession Township of Cramahe, Northumberland County	TITLE **Site Photos**
Photos Taken: May 5, 2023	ORE Oakridge Environmental Ltd. Environmental and Hydrogeological Services	PROJECT # 23-3268 DATE July 2023 FIGURE NO. **6**
Optimized for Oakridge Environmental Ltd. printing		

NAD 1983 UTM Zone 18N

Scoped Natural Heritage Evaluation (_s_NHE)
Proposed One (1) Lot Severance
519 Beach Drive, Lake Ontario
Part of Lot 12, Broken Front Concession
Township of Cramahe,
Northumberland County

- Approximate Property Boundary
- Proposed Severance
- Wetland (Unevaluated)
- Wetland (Provincially Significant)
- Wetland (ORE)
- Wetland Setback/VPZ (30 m)
- Conceptual Residence (2,500 ft^2)
- Conceptual Well (with 15 m setback)
- Conceptual Conventional Filter Bed (based on 3,000 L/day, T = 50 min/cm)
- Road
- Contour (5 m Intervals)
- Spot Height (m asl)

Scale: 1:2,000

0 20 40 80 m

Notes: Base maps provided by Land Information Ontario and Natural Resources Canada (2023)

Imagery provided by Esri (2019)

Feature locations determined by differential GPS (+/- 3.0 m)

Optimized for Oakridge Environmental Ltd. printing

TITLE

Constraints

ORE Oakridge Environmental Ltd.
Environmental and Hydrogeological Services

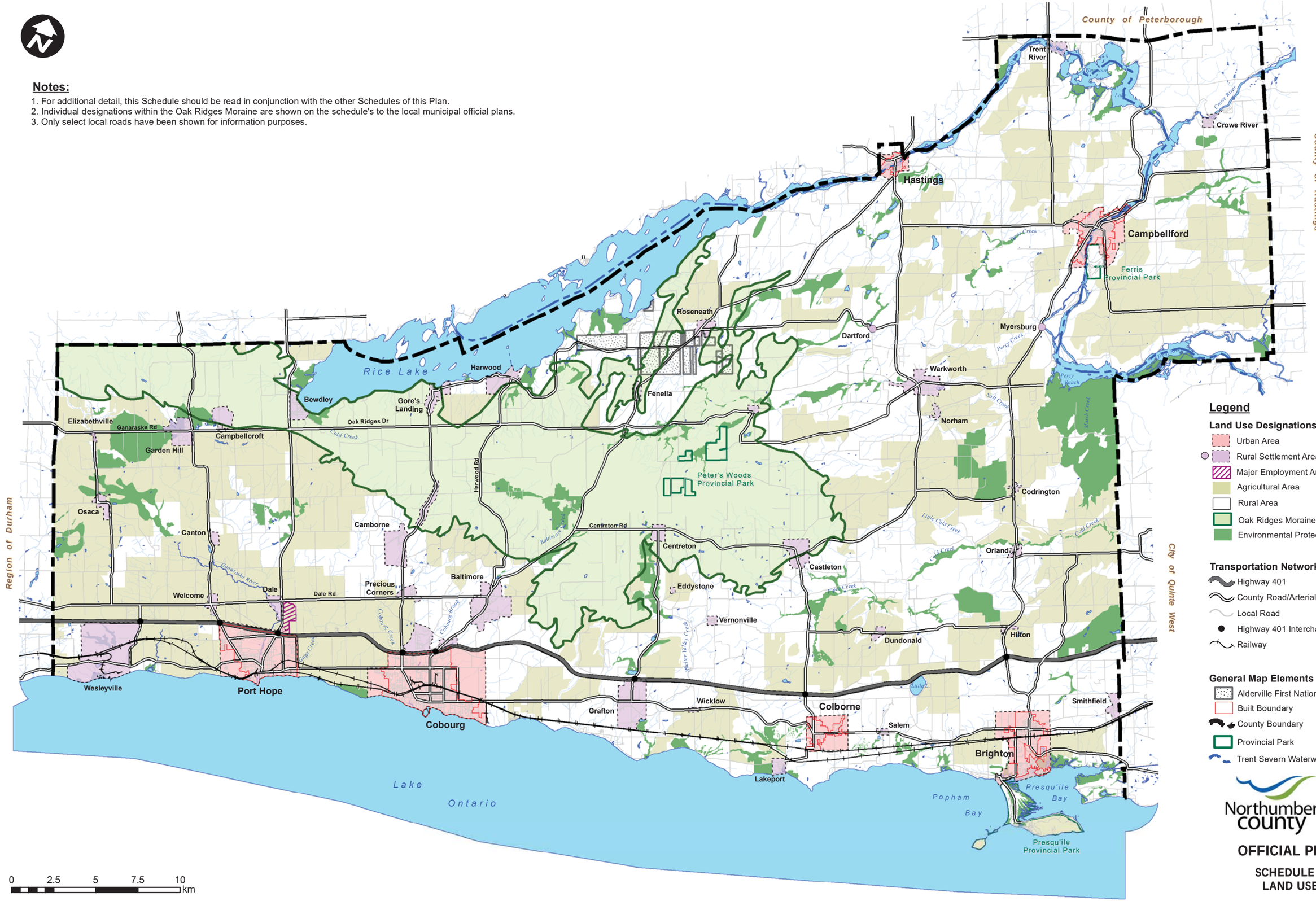
PROJECT #	FIGURE NO.
23-3268	7
DATE	
July 2023	

Appendix A

County of Northumberland Official Plan Schedule A & B

Notes:

1. For additional detail, this Schedule should be read in conjunction with the other Schedules of this Plan.
2. Individual designations within the Oak Ridges Moraine are shown on the schedule's to the local municipal official plans.
3. Only select local roads have been shown for information purposes.



Legend

Land Use Designations

- Urban Area
- Rural Settlement Area
- Major Employment Area (Preferred Location)
- Agricultural Area
- Rural Area
- Oak Ridges Moraine
- Environmental Protection Area

Transportation Network Elements

- Highway 401
- County Road/Arterial Road
- Local Road
- Highway 401 Interchange
- Railway

General Map Elements

- Alderville First Nation
- Built Boundary
- County Boundary
- Provincial Park
- Trent Severn Waterway

Northumberland County

OFFICIAL PLAN

SCHEDULE A
LAND USE

November 10, 2016

Notes:

1. For additional detail, this Schedule should be read in conjunction with the other Schedules of this Plan.
2. Only select local roads have been shown for information purposes.
3. Based on information from Aggregate Resource Inventory Papers 142, 143 & 158. Resources within Urban Areas, Rural Settlement Areas and Provincially Significant Wetlands are not shown.
4. Based on information from Ontario Geological Survey Karst Study for Southern Ontario (Issued 2008).

County of Peterborough

County of Hastings

Region of Durham

City of Quinte West

Lake Ontario

Rice Lake

Trent River

Crowe River

Hastings

Campbellford

Ferris Provincial Park

Myersburg

Roseneath

Dartford

Harwood

Bewdley

Gore's Landing

Fenella

Warkworth

Norham

Codrington

Orland

Castleton

Elizabethville

Ganaraska Rd

Campbellcroft

Garden Hill

Oak Ridges Dr

Peter's Woods Provincial Park

Osaca

Canton

Camborne

Centreton Rd

Centreton

Baltimore

Eddystone

Vernonville

Dundonald

Hilton

Smithfield

Welcome

Dale

Dale Rd

Precious Corners

Wesleyville

Port Hope

Cobourg

Grafton

Wicklow

Colborne

Salem

Brighton

Lakeport

Presqu'ile Bay

Popham Bay

Presqu'ile Provincial Park

0 2.5 5 7.5 10 km

1:200,000

Legend

Resource Areas

- Selected Sand & Gravel Resource Area of Primary Significance *(See Note 3)*
- Selected Sand & Gravel Resource Area of Secondary Significance *(See Note 3)*
- Selected Bedrock Area *(See Note 3)*
- Mineral Aggregate Operation

Constraint Areas

- Areas of Natural and Scientific Interest
- Crown Land
- Karst Topography *(See Note 4)*
- Provincially Significant Wetland

Waste Management

- Federal Waste Management Facility
- Open Waste Disposal Site

Transportation Network Elements

- Highway 401
- County Road/Arterial Road
- Local Road
- Highway 401 Interchange
- Railway

General Map Elements

- Alderville First Nation
- County Boundary
- Oak Ridges Moraine Boundary
- Rural Settlement Area
- Trent Severn Waterway
- Urban Area

Northumberland county

OFFICIAL PLAN
SCHEDULE B
RESOURCE AREAS, CONSTRAINT AREAS AND WASTE MANAGEMENT

November 10, 2016

Appendix B

General Species Descriptions

Birds

Bald Eagle (*Haliaeetus leucocephalus*) is listed as "Special Concern" by *Species at Risk Ontario* (SARO), and is not protected under the *Endangered Species Act* (ESA). The species has to be nesting below the boundary delineated within northern Ontario to be included in this group. The Bald Eagle prefers mature forests on the edge of waterways which includes large swamps and lake or river systems. Its main diet consists of fish and carcasses. The species tends to nest within lakeside pine trees as the dense needles tend to conceal their large stick nest from other predator species. There are several known nesting sites within the Trent-Severn Waterway and Kawartha Lakes system.

Bank Swallow (*Riparia riparia*) is listed as "Threatened" by *Species at Risk Ontario* (SARO) and is protected under the *Endangered Species Act* (ESA). This avian species nests in burrows into the banks of silt and sand deposits. Nests tend to be found on the shorelines of rivers and lakes. The Bank Swallow may also inhabit sand and gravel pits. Typically, this species forages on insects in flight, but will also glean insects off the water.

Barn Swallow (*Hirundo rustica*) is listed as "Special Concern" by SARO and is not protected under the ESA. The Barn Swallow inhabits open-rural and urban sites where buildings are situated near watercourses. Nesting is typically sporadic within loose colonies on building structures, bridges and other suitable overhanging structures. The cup-like mud nest is adhered to areas beneath the roof of the structure to conceal the nest from predators and keep it dry. The Barn Swallow feeds on insects by catching them on the wing.

Bobolink (*Dolichonyx oryzivorus*) is listed as "Threatened" by SARO and is protected under the ESA. The Bobolink prefers large tracts of tallgrass areas, either true prairies or hay fields, as it forages low to the ground in search of larvae and seeds.

Eastern Meadowlark (*Sturnella magna*) is listed as "Threatened" by SARO and is protected under the ESA. The Eastern Meadowlark is similar to Bobolink, as this species also prefers large tracts of agricultural fields or tallgrass prairies to nest within. Eastern Meadowlark is a ground nester, thus requires the tall grass to conceal its nest and eggs. Feeding includes beetles, crickets and spiders.

Eastern Whip-poor-will (*Anthrostomus vociferus*) is listed as "Threatened" by SARO and is protected under the ESA. The Whip-poor-will prefers a combination of large natural tracts of secondary succession forest, watercourses and edge habitat consisting of meadow areas, with open deciduous and pine woodlands. The Whip-poor-will does not construct a nest, but rather uses the soft leaf litter on the ground to form a nest and lay the eggs directly on the ground. The Whip-poor-will is a

nighttime hunter, calling its own name while searching for large flying insects, beetles, moths, mosquitos and sometimes grasshoppers. The Whip-poor-will often choose pine species adjacent to waterways to call from.

Eastern Wood-Pewee (*Contopus virens*) is listed as "Special Concern" by SARO and is not protected under the ESA. This species prefers mixed deciduous and coniferous woodlands which are open or considered edge habitat. Nesting occurs on a tree branch as the species catches insects from a perch.

Grasshopper Sparrow (*Ammodramus savannarum*) is listed as "Special Concern" by SARO and is not protected under the ESA. The Grasshopper Sparrow prefers large (greater than 5 ha) grassland habitats where it breeds. Grassland habitats include pastures, hayfields, natural prairies, alvars. Nests are typically hidden within the grassland and its preferred diet in the summer is large insects (i.e., Grasshoppers).

Henslow's Sparrow (*Ammodramus henslowii*) is listed as "Endangered" by SARO and is protected under the ESA. The Henslow's Sparrow is found in abandoned farm fields, pastures, and wet meadows. It tends to avoid fields that have been grazed or are crowded with trees and shrubs. It prefers extensive, dense, tall grasslands where it can more easily conceal its small ground nest.

Least Bittern (*Ixobrychus exilis*) is listed as "Threatened" by SARO and is protected under the ESA. The Least Bittern inhabits freshwater marshes where tall, impenetrable stands of emergent vegetation are utilized for coverage. The Least Bittern may build up a hunting platform in search of small fish, insects, and amphibians.

Piping Plover (*Charadrius melodus*) is listed as "Endangered" by SARO and is protected under the ESA. Piping Plovers are round and stocky shore birds, between the size of a sparrow and robin. They have a sandy colouration between gray and brown. In breeding season, their black collar and black line are visible and their short stubby bills are orange with a black tip. In non-breeding season, their collar is more gray and their bills are black. Piping Plovers prefer dry, sandy, or gravelly areas just above the water mark for nesting. They are typically found around alkali wetlands, coastal beaches, and the Great Lakes.

Red-headed Woodpecker (*Melanerpes erythrocephalus*) is listed as "Endangered" by SARO and is not protected under the ESA. It prefers a combination of deciduous forests and rural development areas, similar to a park-like setting. The deciduous species can be oak or maple, however, the understory must be meadow-like or maintained lawnspace in parklands. This species will either roost within cavities constructed by other woodpeckers, or create its own cavity. It feeds on beetles, caterpillars and common insects that are found within the bark of trees.

Wood Thrush (*Hylocichia mustelina*) is listed as "Special Concern" by SARO and is protected under the ESA. The Wood Thrush enjoys relatively undisturbed, mature woodlands. Nesting occurs low in the fork of a tree as this species forages for berries and insects at ground level. Similar to the Eastern Wood-Pewee, this species prefers large tracts of woodland.

Amphibians & Reptiles

Midland Painted Turtle (*Chrysemys picta marginata*) is listed as "Special Concern" by COSEWIC and is currently under review by COSSARO. Midland Painted Turtles spend the majority of their lives in water. They prefer shallow water with aquatic vegetation, soft mud, and leaf litter at the bottom. Typically found basking on logs, rocks, and shorelines in sunlight. Midland Painted Turtles nest between mid-spring and early summer. They tend to choose gravely, sandy and loam soils for nesting.

Snapping Turtle (*Chelydra serpentina*) is listed as "Special Concern" by SARO and is not protected under the ESA. Snapping Turtles spend most of their lives in water. They prefer shallow waters so they can hide under the soft mud and leaf litter, with only their noses exposed to the surface to breathe. During the nesting season, from early to mid summer, females travel overland in search of a suitable nesting site, usually gravelly or sandy areas along streams. Snapping Turtles often take advantage of man-made structures for nest sites, including roads (especially gravel shoulders), dam and aggregate pits.

Fish

Lake Whitefish (*Coregonus clupeaformis*) is listed as "Threatened" by SARO and is protected under the ESA. Specifically the Opeongo Lake large and small-bodied populations. Lake Whitefish are deep water bottom feeders that range between 30 and 65 cm. They are slightly deep bodied and have a greenish-white back, silvery sides, and silvery-white belly. The snout overhangs the mouth and has two flaps of skin between the nostrils. They also have a deeply forked tail. Lake Whitefish will move into rivers and shoals of large lakes to feed in the spring.

Insects

Monarch (*Danaus plexippus*) is listed as "Special Concern" by SARO and is not protected under the ESA. Throughout their life cycle, Monarchs use two different types of habitat in Ontario. Only the caterpillars feed on milkweed (*Asclepias* spp.) plants and are confined to meadows and open areas where milkweed grows. Adult

butterflies can be found in more diverse habitats where they feed on nectar from a variety of wildflowers. Monarchs spend the winter in central Mexico.

Appendix C

NHIC Query

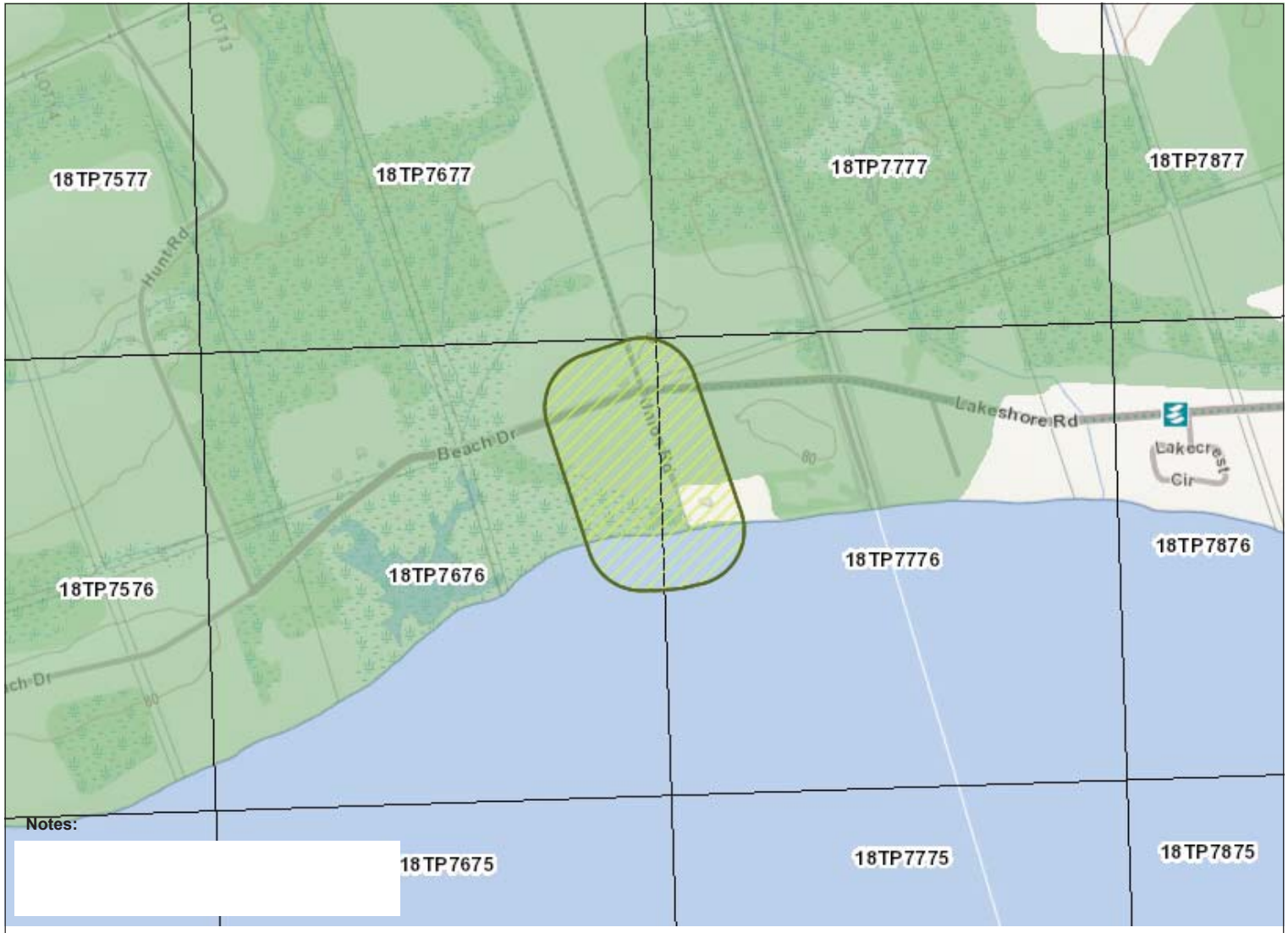
Ontario

Ministry of Natural Resources and Forestry

Make-a-Map: Natural Heritage Areas

NHIC Map

Map created:4/24/2023



Notes:

Legend

- NHIC 1 Km Grid
- ANSI
- Earth Science Provincially Significant/sciences de la terre d'importance provinciale
- Earth Science Regionally Significant/sciences de la terre d'importance régionale
- Life Science Provincially Significant/sciences de la vie d'importance provinciale
- Life Science Regionally Significant/sciences de la vie d'importance régionale
- Conservation Reserve
- Provincial Park
- Natural Heritage System

0.7 0 0.33 0.7 Kilometres

Absence of a feature in the map does not mean they do not exist in this area.

NHIC Data

To work further with this data select the content and copy it into your own word or excel documents.

OGF ID	Element Type	Common Name	Scientific Name	SRank	SARO Status	COSEWIC Status	ATLAS NAD83 IDENT	COMMENTS
1068932	NATURAL AREA	Hunt and Beach Road-Popham Bay Wetland					18TP7676	
1068932	NATURAL AREA	HUNT AND BEACH ROAD WETLAND					18TP7676	
1068932	SPECIES	Henslow's Sparrow	Ammodramus henslowii		END	END	18TP7676	
1068932	SPECIES	Least Bittern	Ixobrychus exilis		THR	THR	18TP7676	
1068932	SPECIES	Midland Painted Turtle	Chrysemys picta marginata			SC	18TP7676	
1068932	SPECIES	Eastern Meadowlark	Sturnella magna		THR	THR	18TP7676	
1068932	SPECIES	Bobolink	Dolichonyx oryzivorus		THR	THR	18TP7676	
1068932	SPECIES	Snapping Turtle	Chelydra serpentina		SC	SC	18TP7676	
1068932	WILDLIFE CONCENTRATION AREA	Mixed Wader Nesting Colony		SNR			18TP7676	
1068933	NATURAL AREA	Hunt and Beach Road-Popham Bay Wetland					18TP7677	
1068933	NATURAL AREA	Lakeshore Road Wetland					18TP7677	
1068933	SPECIES	Eastern Meadowlark	Sturnella magna		THR	THR	18TP7677	
1068933	SPECIES	Bobolink	Dolichonyx oryzivorus		THR	THR	18TP7677	
1068933	SPECIES	Snapping Turtle	Chelydra serpentina		SC	SC	18TP7677	
1068942	NATURAL AREA	Lakeshore Road Wetland					18TP7776	
1068942	SPECIES	Midland Painted Turtle	Chrysemys picta marginata			SC	18TP7776	

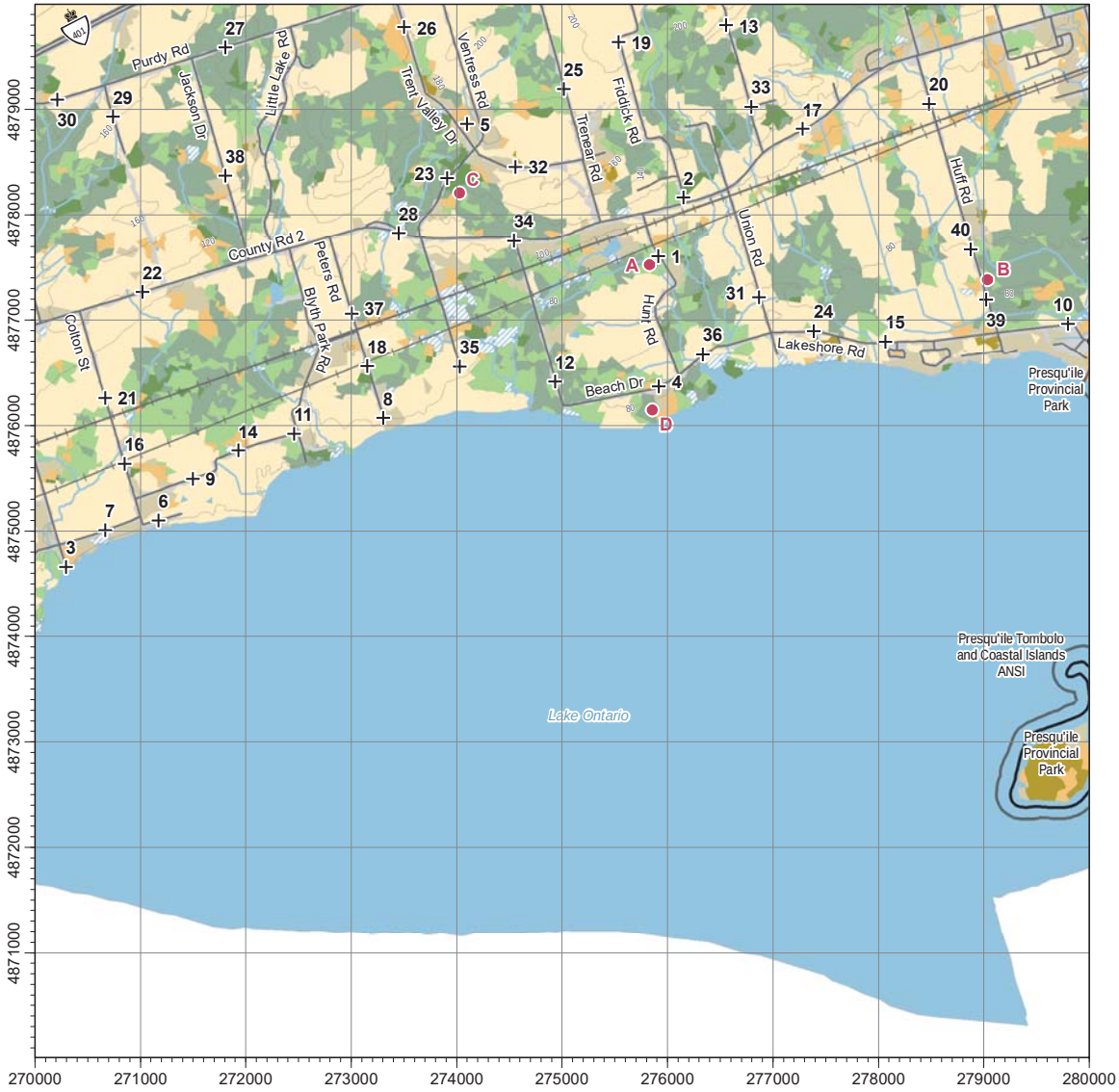
OGF ID	Element Type	Common Name	Scientific Name	SRank	SARO Status	COSEWIC Status	ATLAS NAD83 IDENT	COMMENTS
1068942	SPECIES	Bobolink	Dolichonyx oryzivorus		THR	THR	18TP7776	
1068942	SPECIES	Eastern Meadowlark	Sturnella magna		THR	THR	18TP7776	

Appendix D

OBBA Query

Region / Région: 17

Square / Parcelle: 18TTP77



Predefined point count coordinates
Coordonnées des points d'écoute prédéterminés

POINT +	EASTING UTM Est	NORTHING UTM Nord
1	275913	4877606
2	276149	4878164
3	270296	4874660
4	275918	4876369
5	274099	4878860
6	271170	4875100
7	270664	4875007
8	273301	4876071
9	271497	4875496
10	279799	4876962
11	272457	4875922
12	274934	4876418
13	276556	4879797
14	271928	4875763
15	278065	4876794
16	270850	4875637
17	277281	4878813
18	273151	4876566
19	275535	4879636
20	278480	4879050
21	270664	4876263
22	271021	4877269
23	273911	4878345
24	277385	4876896
25	275017	4879191
26	273501	4879779
27	271803	4879588
28	273451	4877825
29	270739	4878931
30	270213	4879091
31	276867	4877215
32	274558	4878453
33	276795	4879024
34	274545	4877755
35	274030	4876561
36	276333	4876675
37	273003	4877061
38	271803	4878368
39	279020	4877194
40	278876	4877673

Number of off-road point counts
Nombre de points d'écoute hors route

Broadleaf forest:	2	Grassland:	0
Coniferous forest:	0	Wetland:	0
Mixed forest:	3	Shrubland:	0

Predefined / Prédéterminés: 20
Off-road / Hors route: 5

Atlas-2 off-road point ● **Point hors route Atlas-2**

0 1 km

Atlas des oiseaux nicheurs Ontario Breeding Bird Atlas

Legend	Légende
Expressway or highway	Autoroute ou route nationale (asphaltée)
Regional or local road	Route régionale ou locale (asphaltée ou non)
Resource / Recreation	Ressource / route récréative
Rail line	Chemin de fer
Utility corridor	Ligne de transport d'énergie
Watercourse	Rivière ou ruisseau
Protected or conserved area	Zone protégée ou conservée
Fire disturbance since 2000	Incendie perturbé depuis 2000
Broadleaf forest 5	Forêt de feuillus
Coniferous forest 1	Forêt de conifères
Mixed forest 9	Forêt mixte
Shrubland 2	Milieu arbustif
Grassland	Prairie
Barren 2	Dénudé
Wetland 1	Milieu humide
Agriculture 18	Milieu agricole
Water 48	Eau
Developed area 3	Zone développée
Unclassified 11	Non classifié

The approximate percent coverage of each habitat type is indicated by the numbered box in the legend.

La couverture approximative est indiquée en pourcentage dans le rectangle coloré de la légende.

Cartographic production by Birds Canada
Production cartographique par oiseaux Canada

6° Universal Transverse Mercator (UTM) Projection; Zone 18, Central Meridian -75°; North American Datum 1983 (NAD 83)

Projection universelle transverse de Mercator (UTM) 6° Zone 18, méridien central -75°; Système de référence géodésique nord-américain 1983 (NAD 83)

BIRDS CANADA OISEAUX CANADA

March 2021 / mars 2021

https://www.birdsontario.org/

18TTP77

Northumberland

Region / Région: 17

BIRDS CANADA
OISEAUX CANADA

Square Summary (18TTP77) [change]

	#species				#hours		#pc done	
	poss	prob	conf	total	total	peak	road	offrd
Curr.	40	13	17	70	6	1.4	0	0
Prev.	14	24	82	120	144.3	—	25	

Region summary (#17: Northumberland, ON)

#squares	#sq with data	#species	#squares (pc)	
			target	compl.
41	45	163	41	9
41	41	187	0	40

Target number of point counts in this square: 25 in total: 20 road side, 5 off road (Broadleaf Forest in 2, Mixed Forest in 3). Please try to ensure that each off-road station is located such that the entire 100m radius circle is within the prescribed habitat.

SPECIES	Prev.	Code	%
Canada Goose	FY	FY	71
Mute Swan	FY		22
Trumpeter Swan			22
Wood Duck	FY		60
Blue-winged Teal §	P		13
Northern Shoveler ‡	H		0
Gadwall	NE		2
American Wigeon ‡			2
Mallard	AE	H	66
American Black Duck ‡			0
Northern Pintail ‡			0
Green-winged Teal ‡			2
Redhead †			0
Hooded Merganser	H		26
Common Merganser ‡	H		4
Red-breasted Merganser ‡			0
Ruddy Duck ‡			0
Wild Turkey	FY	D	75
Ruffed Grouse	FY		73
Ring-necked Pheasant ‡	H		11
Pied-billed Grebe			20
Rock Pigeon (Feral Pigeon)	AE		73
Mourning Dove	FY	D	93
Yellow-billed Cuckoo	H		33
Black-billed Cuckoo	T		51
Common Nighthawk §			8
Eastern Whip-poor-will §	P	S	22
Chimney Swift §			26
Ruby-throated Hummingbird	FY		46
King Rail †			0
Virginia Rail	FY	A	37
Sora	S		17
Common Gallinule §	H		13

SPECIES	Prev.	Code	%
American Coot ‡			0
Sandhill Crane ‡			13
Piping Plover †			2
Killdeer §	DD	S	75
Upland Sandpiper †	P		8
American Woodcock	FY	S	53
Wilson's Snipe	D	S	24
Spotted Sandpiper	FY		42
Ring-billed Gull §	NE	H	11
Herring Gull §	NE	H	6
Great Black-backed Gull †	P		0
Caspian Tern ‡			4
Black Tern †			4
Common Tern § ‡			2
Common Loon	H		11
Double-crested Cormorant §	NE	AE	11
American Bittern	T		33
Least Bittern †	P		17
Great Blue Heron §	NE		35
Great Egret †	NY	AE	4
Green Heron §	FY		53
Black-crowned Night-Heron †	NE	AE	4
Turkey Vulture	T	H	68
Osprey	T		46
Northern Harrier	CF		35
Sharp-shinned Hawk	T		13
Cooper's Hawk	T		35
Northern Goshawk ‡			4
Bald Eagle ‡			4
Red-shouldered Hawk			15
Broad-winged Hawk	H		51
Red-tailed Hawk	AE	H	68
Eastern Screech-Owl		S	35

SPECIES	Prev.	Code	%
Great Horned Owl	P	A	31
Barred Owl			33
Long-eared Owl ‡			0
Northern Saw-whet Owl			2
Belted Kingfisher	CF	H	73
Yellow-bellied Sapsucker	P	FY	73
Red-headed Woodpecker †	H		24
Red-bellied Woodpecker	FY		75
Downy Woodpecker	FY	H	84
Hairy Woodpecker	FY	H	84
Pileated Woodpecker	CF		77
Northern Flicker	AE	S	91
American Kestrel §	CF		64
Merlin			51
Peregrine Falcon ‡			4
Olive-sided Flycatcher §			0
Eastern Wood-Pewee §	T	S	84
Yellow-bellied Flycatcher ‡			0
Alder Flycatcher	T	S	71
Willow Flycatcher	T	S	48
Least Flycatcher	AE	S	48
Eastern Phoebe	AE		80
Great Crested Flycatcher	FY	S	86
Eastern Kingbird	AE	P	91
Yellow-throated Vireo ‡			8
Blue-headed Vireo			28
Warbling Vireo	AE	S	84
Red-eyed Vireo	NE	A	95
Loggerhead Shrike †			0
Blue Jay	NE	T	91
American Crow	FY	S	93
Common Raven			73
Black-capped Chickadee	AE	V	93

SPECIES	Prev.	Code	%
Horned Lark §	P		22
Northern Rough-winged Swallow	FY		40
Purple Martin §	FY		17
Tree Swallow	NE	AE	80
Bank Swallow §	AE		17
Barn Swallow §	AE	H	88
Cliff Swallow §	AE		28
Golden-crowned Kinglet			15
Red-breasted Nuthatch	FY		71
White-breasted Nuthatch	FY	S	80
Brown Creeper			35
Blue-gray Gnatcatcher	S		6
House Wren	NE	S	91
Winter Wren	T		51
Sedge Wren ‡			4
Marsh Wren	AE	S	37
Carolina Wren ‡			13
European Starling	CF	AE	93
Gray Catbird	AE	A	88
Brown Thrasher	CF	NB	91
Northern Mockingbird ‡			8
Eastern Bluebird	AE	CF	64
Veery	FY	S	73
Hermit Thrush			26
Wood Thrush §	T	S	80
American Robin	NY	CF	95
Cedar Waxwing	FY	H	88
House Sparrow	AE	AE	68
House Finch	FY	NY	42
Purple Finch	H		60
Red Crossbill ‡			0
White-winged Crossbill ‡			0
Pine Siskin ‡			2

SPECIES	Prev.	Code	%
American Goldfinch	FY	P	93
Grasshopper Sparrow §	CF	S	55
Chipping Sparrow	CF	S	91
Clay-colored Sparrow			26
Field Sparrow §	T	S	77
Dark-eyed Junco ‡			0
White-throated Sparrow	T		57
Vesper Sparrow	CF		62
Savannah Sparrow	AE	S	86
Song Sparrow	CF	CF	100
Lincoln's Sparrow ‡			0
Swamp Sparrow	AE	T	75
Eastern Towhee §	P	S	64
Bobolink §	FY		68
Eastern Meadowlark §	CF	S	84
Orchard Oriole		P	31
Baltimore Oriole	FS	S	88
Red-winged Blackbird	AE	CF	95
Brown-headed Cowbird	FY	S	73
Common Grackle	CF	CF	91
Ovenbird	CF		73
Louisiana Waterthrush †			0
Northern Waterthrush	T		55
Golden-winged Warbler †			8
Blue-winged Warbler			28
Black-and-white Warbler	CF		75
Nashville Warbler			42
Mourning Warbler	CF	S	48
Common Yellowthroat	AE	FS	95
Hooded Warbler ‡			0
American Redstart	CF	S	82
Cerulean Warbler †			0
Northern Parula ‡			0

SPECIES	Prev.	Code	%
Magnolia Warbler	S		11
Blackburnian Warbler			20
Yellow Warbler	CF	A	88
Chestnut-sided Warbler	CF	S	73
Black-throated Blue Warbler	S		17
Pine Warbler	CF		66
Yellow-rumped Warbler			26
Black-throated Green Warbler	T		53
Canada Warbler §			22
Scarlet Tanager			57
Northern Cardinal	CF	NE	91
Rose-breasted Grosbeak	FY		82
Indigo Bunting	FY	S	82

This list includes all breeding species expected in the region #17 (Northumberland). Underlined species are those that you should try to add to this square (18TTP77). They have not yet been reported in this square, but have been reported in more than 50% of the squares in this region so far. "Prev." is the code for the highest breeding evidence for that species in square 18TTP77 in the previous atlas. "Code" is the code for the highest breeding evidence for that species in square 18TTP77 over the last 5 years. The % columns give the percentage of squares in that region where that species was reported (this gives an idea of the expected chance of finding that species in region #17). Rare/Colonial Species Report Forms should be completed for species marked: § (Species of interest), ‡ (regionally rare), † (provincially rare). An up-to-date version of this sheet is available from https://naturecounts.ca//nc//atlas/squaresummaryform.jsp?squareID=18TTP77&lang=EN Data current as of **23/04/2023 16:21**.

Appendix E

eBird Data

Change location | Year-round, All years

Brighton--Beach Dr Marsh

Northumberland County (/region/CA-ON-NU?yr=all&m=),
Ontario (/region/CA-ON?yr=all&m=),
CA (/region/CA?yr=all&m=)

Map(/hotspots?hs=L9755720&yr=all&m=)

Directions(https://www.google.com/maps/search/?api=1&query=44.007563,-77.788161)

Hotspot navigation

Overview (/hotspot/L9755720?yr=all&m=)

Illustrated Checklist (/hotspot/L9755720/media?yr=all&m=)

VIEW MY...

My eBird (/myebird/L9755720)

Life List (/lifelist/L9755720)

Target Species (/targets?r1=L9755720&bmo=1&emo=12)

Checklists (/mychecklists/L9755720)

EXPLORE...

Hotspot Map (/hotspots?hs=L9755720&yr=all&m=)

Bar Charts (/barchart?r=L9755720&yr=all&m=)

Media (https://ebird.org/media/catalog?regionCode=L9755720)

Printable Checklist (/printableList?regionCode=L9755720&yr=all&m=)

90
Species observed
(/hotspot/L9755720?yr=all&m=)

12
Complete checklists
(/hotspot/L9755720/activity?yr=all&m=)

1.	**Turkey Vulture** *Cathartes aura*		1	19 Aug 2022	Jean and Bob Hilscher
2.	**Swamp Sparrow** *Melospiza georgiana*		X	30 May 2022	Anonymous eBirder
3.	**Common Yellowthroat** *Geothlypis trichas*		X	30 May 2022	Anonymous eBirder
4.	**Yellow Warbler** *Setophaga petechia*		X	30 May 2022	Anonymous eBirder
5.	**Canada Goose** *Branta canadensis*		25	20 Mar 2022	Richard Girardin
6.	**Mute Swan** *Cygnus olor*	*	11	20 Mar 2022	Richard Girardin
7.	**Tundra Swan** *Cygnus columbianus*		2	20 Mar 2022	Richard Girardin
8.	**American Wigeon** *Mareca americana*		1	20 Mar 2022	Richard Girardin
9.	**Northern Pintail** *Anas acuta*		2	20 Mar 2022	Richard Girardin
10.	**Canvasback** *Aythya valisineria*		6	20 Mar 2022	Richard Girardin
11.	**Redhead** *Aythya americana*		200	20 Mar 2022	Richard Girardin
12.	**Ring-necked Duck** *Aythya collaris*		1	20 Mar 2022	Richard Girardin
13.	**White-winged Scoter** *Melanitta deglandi*		6	20 Mar 2022	Richard Girardin
14.	**Common Goldeneye** *Bucephala clangula*		12	20 Mar 2022	Richard Girardin
15.	**Killdeer** *Charadrius vociferus*		1	20 Mar 2022	Richard Girardin
16.	**Ring-billed Gull** *Larus delawarensis*		1	20 Mar 2022	Richard Girardin
17.	**Herring Gull** *Larus argentatus*		3	20 Mar 2022	Richard Girardin
18.	**Downy Woodpecker** *Dryobates pubescens*		1	20 Mar 2022	Richard Girardin
19.	**Blue Jay** *Cyanocitta cristata*		2	20 Mar 2022	Richard Girardin
20.	**Common Raven** *Corvus corax*		1	20 Mar 2022	Richard Girardin
21.	**Black-capped Chickadee** *Poecile atricapillus*		2	20 Mar 2022	Richard Girardin
22.	**European Starling** *Sturnus vulgaris*	*	1	20 Mar 2022	Richard Girardin
23.	**American Robin** *Turdus migratorius*		1	20 Mar 2022	Richard Girardin
24.	**House Finch** *Haemorhous mexicanus*	*	1	20 Mar 2022	Richard Girardin
25.	**American Goldfinch** *Spinus tristis*		1	20 Mar 2022	Richard Girardin

26.	**American Tree Sparrow** *Spizelloides arborea*	2	20 Mar 2022	Richard Girardin
27.	**Dark-eyed Junco** *Junco hyemalis*	2	20 Mar 2022	Richard Girardin
28.	**Red-winged Blackbird** *Agelaius phoeniceus*	7	20 Mar 2022	Richard Girardin
29.	**Common Grackle** *Quiscalus quiscula*	2	20 Mar 2022	Richard Girardin
30.	**Northern Cardinal** *Cardinalis cardinalis*	2	20 Mar 2022	Richard Girardin
31.	**Osprey** *Pandion haliaetus*	1	6 Sep 2021	Brenda Leduc
32.	**American Kestrel** *Falco sparverius*	1	6 Sep 2021	Brenda Leduc
33.	**American Crow** *Corvus brachyrhynchos*	1	6 Sep 2021	Brenda Leduc
34.	**Mourning Dove** *Zenaida macroura*	2	29 Mar 2021	Baxter Naday
35.	**Great Blue Heron** *Ardea herodias*	1	29 Mar 2021	Baxter Naday
36.	**Bald Eagle** *Haliaeetus leucocephalus*	1	29 Sep 2020	Jason Nanner
37.	**White-breasted Nuthatch** *Sitta carolinensis*	1	29 Sep 2020	Jason Nanner
38.	**Ruby-throated Hummingbird** *Archilochus colubris*	4	4 Jun 2020	Jason Nanner
39.	**Spotted Sandpiper** *Actitis macularius*	1	4 Jun 2020	Jason Nanner
40.	**Common Tern** *Sterna hirundo*	10	4 Jun 2020	Jason Nanner
41.	**Double-crested Cormorant** *Nannopterum auritum*	30	4 Jun 2020	Jason Nanner
42.	**Great Egret** *Ardea alba*	1	4 Jun 2020	Jason Nanner
43.	**Belted Kingfisher** *Megaceryle alcyon*	2	4 Jun 2020	Jason Nanner
44.	**Hairy Woodpecker** *Dryobates villosus*	1	4 Jun 2020	Jason Nanner
45.	**Brown Thrasher** *Toxostoma rufum*	2	4 Jun 2020	Jason Nanner
46.	**Wood Thrush** *Hylocichla mustelina*	1	4 Jun 2020	Jason Nanner
47.	**Brown-headed Cowbird** *Molothrus ater*	4	4 Jun 2020	Jason Nanner
48.	**Rose-breasted Grosbeak** *Pheucticus ludovicianus*	1	4 Jun 2020	Jason Nanner
49.	**Gadwall** *Mareca strepera*	2	16 May 2020	Jason Nanner
50.	**Mallard** *Anas platyrhynchos*	4	16 May 2020	Jason Nanner

51.	**Common Merganser** *Mergus merganser*	4	16 May 2020	Jason Nanner
52.	**Red-breasted Merganser** *Mergus serrator*	4	16 May 2020	Jason Nanner
53.	**Semipalmated Plover** *Charadrius semipalmatus*	2	16 May 2020	Jason Nanner
54.	**Common Loon** *Gavia immer*	6	16 May 2020	Jason Nanner
55.	**Northern Harrier** *Circus hudsonius*	2	16 May 2020	Jason Nanner
56.	**Eastern Kingbird** *Tyrannus tyrannus*	6	16 May 2020	Jason Nanner
57.	**Gray Catbird** *Dumetella carolinensis*	1	16 May 2020	Jason Nanner
58.	**Cedar Waxwing** *Bombycilla cedrorum*	4	16 May 2020	Jason Nanner
59.	**White-crowned Sparrow** *Zonotrichia leucophrys*	6	16 May 2020	Jason Nanner
60.	**White-throated Sparrow** *Zonotrichia albicollis*	1	16 May 2020	Jason Nanner
61.	**Eastern Meadowlark** *Sturnella magna*	1	16 May 2020	Jason Nanner
62.	**Baltimore Oriole** *Icterus galbula*	6	16 May 2020	Jason Nanner
63.	**Yellow-rumped Warbler** *Setophaga coronata*	4	16 May 2020	Jason Nanner
64.	**Black-throated Green Warbler** *Setophaga virens*	1	16 May 2020	Jason Nanner
65.	**Indigo Bunting** *Passerina cyanea*	1	16 May 2020	Jason Nanner
66.	**American Woodcock** *Scolopax minor*	1	15 May 2020	Jason Nanner
67.	**Eastern Phoebe** *Sayornis phoebe*	1	15 May 2020	Jason Nanner
68.	**Tree Swallow** *Tachycineta bicolor*	1	15 May 2020	Jason Nanner
69.	**Chipping Sparrow** *Spizella passerina*	2	15 May 2020	Jason Nanner
70.	**Field Sparrow** *Spizella pusilla*	2	15 May 2020	Jason Nanner
71.	**Bobolink** *Dolichonyx oryzivorus*	5	15 May 2020	Jason Nanner
72.	**Pine Warbler** *Setophaga pinus*	1	15 May 2020	Jason Nanner
73.	**Caspian Tern** *Hydroprogne caspia*	2	10 May 2020	Jason Nanner
74.	**Green Heron** *Butorides virescens*	1	10 May 2020	Jason Nanner
75.	**Northern Flicker** *Colaptes auratus*	1	10 May 2020	Jason Nanner

76.	**Long-tailed Duck** *Clangula hyemalis*		2	4 May 2020	Baxter Naday
77.	**Ruffed Grouse** *Bonasa umbellus*		1	4 May 2020	Baxter Naday
78.	**Barn Swallow** *Hirundo rustica*		2	4 May 2020	Baxter Naday
79.	**Song Sparrow** *Melospiza melodia*		3	4 May 2020	Baxter Naday
80.	**Eastern Towhee** *Pipilo erythrophthalmus*		1	4 May 2020	Baxter Naday
81.	**Wild Turkey** *Meleagris gallopavo*		4	26 Apr 2020	Jason Nanner
82.	**Marsh Wren** *Cistothorus palustris*		2	26 Apr 2020	Jason Nanner
83.	**Wood Duck** *Aix sponsa*		2	6 Aug 2019	Baxter Naday
84.	**Bufflehead** *Bucephala albeola*		1	6 Aug 2019	Baxter Naday
85.	**Hooded Merganser** *Lophodytes cucullatus*		1	6 Aug 2019	Baxter Naday
86.	**Common Gallinule** *Gallinula galeata*		2	6 Aug 2019	Baxter Naday
87.	**Least Bittern** *Ixobrychus exilis*		1	6 Aug 2019	Baxter Naday
88.	**Pileated Woodpecker** *Dryocopus pileatus*		1	6 Aug 2019	Baxter Naday
89.	**Red-eyed Vireo** *Vireo olivaceus*		1	6 Aug 2019	Baxter Naday
90.	**Winter Wren** *Troglodytes hiemalis*		1	6 Aug 2019	Baxter Naday
EXOTIC: ESCAPEE					
	Ring-necked Pheasant *Phasianus colchicus*	*	1	6 Dec 2015	Daniel J. Riley

Appendix F

Species List

Species List

KINGDOM	Common Name	Scientific Name	SARO	SARA
Animalia				
	Alder Flycatcher	Empidonax alnorum		
	American Bittern	Botaurus lentiginosus		
	American Bullfrog	Lithobates catesbeianus		
	American Crow	Corvus brachyrhynchos		
	American Kestrel	Falco sparverius		
	American Toad	Anaxyrus americanus		
	Baltimore Oriole	Icterus galbula		
	Barn Swallow	Hirundo rustica	SC	Threatened/Menacée
	Belted Kingfisher	Megaceryle alcyon		
	Black-capped Chickadee	Poecile atricapillus		
	Blue Jay	Cyanocitta cristata		
	Bluegill	Lepomis macrochirus		
	Canada Goose	Branta canadensis		
	Caspian Tern	Hydroprogne caspia	NAR	
	Cedar Waxwing	Bombycilla cedrorum		
	Chipping Sparrow	Spizella passerina		
	Clay-colored Sparrow	Spizella pallida		
	Common Grackle	Quiscalus quiscula		
	Common Ground Dove	Columbina passerina		
	Common Merganser	Mergus merganser		
	Common Raven	Corvus corax		
	Dark-eyed Junco	Junco hyemalis		
	Downy Woodpecker	Dryobates pubescens		
	Eastern Cottontail	Sylvilagus floridanus		
	Eastern Kingbird	Tyrannus tyrannus		
	Eastern Meadowlark	Sturnella magna	THR	Threatened/Menacée

KINGDOM	Common Name	Scientific Name	SARO	SARA
	Eastern Phoebe	Sayornis phoebe		
	Eastern Towhee	Pipilo erythrophthalmus		
	European Starling	Sturnus vulgaris		
	Golden-crowned Kinglet	Regulus satrapa		
	Gray Catbird	Dumetella carolinensis		
	Great Crested Flycatcher	Myiarchus crinitus		
	Hairy Woodpecker	Dryobates villosus		
	House Sparrow	Passer domesticus		
	House Wren	Troglodytes aedon		
	Indigo Bunting	Passerina cyanea		
	Killdeer	Charadrius vociferus		
	Mallard	Anas platyrhynchos		
	Marsh Wren	Cistothorus palustris		
	Merlin	Falco columbarius	NAR	
	Mourning Dove	Zenaida macroura		
	Mourning Warbler	Geothlypis philadelphia		
	Muskrat	Ondatra zibethicus		
	Northern Cardinal	Cardinalis cardinalis		
	Northern Flicker	Colaptes auratus		
	Painted Turtle	Chrysemys picta		
	Philadelphia Vireo	Vireo philadelphicus		
	Red Admiral	Vanessa atalanta		
	Red Squirrel	Tamiasciurus hudsonicus		
	Red-bellied Woodpecker	Melanerpes carolinus		
	Rose-breasted Grosbeak	Pheucticus ludovicianus		
	Ruby-throated Hummingbird	Archilochus colubris		
	Song Sparrow	Melospiza melodia		
	Tree Swallow	Tachycineta bicolor		
	White-tailed Deer	Odocoileus virginianus		
	Willow Flycatcher	Empidonax traillii		

KINGDOM	Common Name	Scientific Name	SARO	SARA
Plantae				
	Alsike Clover	Trifolium hybridum		
	American Mountain-ash	Sorbus americana		
	Basswood	Tilia americana		
	Bebb's Sedge	Carex bebbii		
	Black Locust	Robinia pseudoacacia		
	Bloodroot	Sanguinaria canadensis		
	Blue-beech	Carpinus caroliniana		
	Bouncing-bet	Saponaria officinalis		
	Broad-leaved Cattail	Typha latifolia		
	Brown-eyed Susan	Rudbeckia triloba		
	Bull Thistle	Cirsium vulgare		
	Butter-and-eggs	Linaria vulgaris		
	Calico Aster	Symphyotrichum lateriflorum		
	Canada Bluegrass	Poa compressa		
	Canada Goldenrod	Solidago canadensis		
	Catnip	Nepeta cataria		
	Chokecherry	Prunus virginiana		
	Coltsfoot	Tussilago farfara		
	Common Boneset	Eupatorium perfoliatum		
	Common Bugloss	Anchusa officinalis		
	Common Burdock	Arctium minus		
	Common Hop	Humulus lupulus		
	Common Lilac	Syringa vulgaris		
	Common Milkweed	Asclepias syriaca		
	Common Motherwort	Leonurus cardiaca		
	Common Mullein	Verbascum thapsus		
	Common Panicgrass	Panicum capillare		
	Common Plantain	Plantago major		
	Common Prickly-ash	Zanthoxylum americanum		

KINGDOM	Common Name	Scientific Name	SARO	SARA
	Common Ragweed	Ambrosia artemisiifolia		
	Common Scouring-rush	Equisetum hyemale		
	Common Self-heal	Prunella vulgaris		
	Common Sow-thistle	Sonchus oleraceus		
	Common St. John's-wort	Hypericum perforatum ssp. perforatum		
	Common Teasel	Dipsacus fullonum		
	Common Timothy	Phleum pratense ssp. pratense		
	Common Viper's Bugloss	Echium vulgare		
	Common Yarrow	Achillea millefolium		
	Crack Willow	Salix euxina		
	Dark-green Bulrush	Scirpus atrovirens		
	Downy Yellow Violet	Viola pubescens var. pubescens		
	Eastern Buttonbush	Cephalanthus occidentalis		
	Eastern Cottonwood	Populus deltoides		
	Eastern White Cedar	Thuja occidentalis		
	Eastern White Pine	Pinus strobus		
	English Hawthorn	Crataegus monogyna		
	English Ivy	Hedera helix		
	European Ash	Fraxinus excelsior		
	European Reed	Phragmites australis ssp. australis		
	Field Bindweed	Convolvulus arvensis		
	Field Brome	Bromus arvensis		
	Field Chickweed	Cerastium arvense		
	Field Mustard	Brassica rapa		
	Fireweed	Chamaenerion angustifolium		
	Flat-top White Aster	Doellingeria umbellata		
	Garden Asparagus	Asparagus officinalis		
	Grey Dogwood	Cornus racemosa		
	Herb-Robert	Geranium robertianum		
	Manitoba Maple	Acer negundo		

KINGDOM	Common Name	Scientific Name	SARO	SARA
	Marsh Muhly	Muhlenbergia racemosa		
	Marsh Speedwell	Veronica scutellata		
	May-apple	Podophyllum peltatum		
	Meadow Willow	Salix petiolaris		
	Narrow-leaved Cattail	Typha angustifolia		
	New England Aster	Symphyotrichum novae-angliae		
	Norway Maple	Acer platanoides		
	Old Switch Panicgrass	Panicum virgatum		
	Ontario Aster	Symphyotrichum ontarionis		
	Paper Birch	Betula papyrifera		
	Path Rush	Juncus tenuis		
	Peach-leaved Willow	Salix amygdaloides		
	Pearly Everlasting	Anaphalis margaritacea		
	Perennial Ragweed	Ambrosia psilostachya		
	Pineappleweed	Matricaria discoidea		
	Poison Ivy	Toxicodendron radicans		
	Purple Loosestrife	Lythrum salicaria		
	Pussy Willow	Salix discolor		
	Red Clover	Trifolium pratense		
	Red Raspberry	Rubus idaeus		
	Red-osier Dogwood	Cornus sericea		
	Red-seeded Dandelion	Taraxacum erythrospermum		
	Reed Canarygrass	Phalaris arundinacea		
	Rusty Willow	Salix atrocinerea		
	Scots Pine	Pinus sylvestris var. sylvestris		
	Sensitive Fern	Onoclea sensibilis		
	Sheep Sorrel	Rumex acetosella		
	Shining Willow	Salix lucida		
	Soft Rush	Juncus effusus		
	Staghorn Sumac	Rhus typhina		

KINGDOM	Common Name	Scientific Name	SARO	SARA
	Star Sedge	Carex echinata		
	Sugar Maple	Acer saccharum		
	Swamp Loosestrife	Decodon verticillatus		
	Sweet Crabapple	Malus coronaria		
	Tall Goldenrod	Solidago altissima		
	Tall Hawkweed	Pilosella piloselloides		
	Trembling Aspen	Populus tremuloides		
	Tufted Vetch	Vicia cracca		
	Tussock Sedge	Carex stricta		
	Upright Brome	Bromus erectus		
	White Campion	Silene latifolia		
	White Elm	Ulmus americana		
	White Heath Aster	Symphyotrichum ericoides		
	White Meadowsweet	Spiraea alba var. alba		
	White Spruce	Picea glauca		
	White Sweet-clover	Melilotus albus		
	White Willow	Salix alba		
	Wild Carrot	Daucus carota		
	Wild Chicory	Cichorium intybus		
	Wild Lily-of-the-valley	Maianthemum canadense		
	Wild Strawberry	Fragaria virginiana		
	Wild Tulip	Tulipa sylvestris		
	Winged Loosestrife	Lythrum alatum		
	Yellow Trout-lily	Erythronium americanum		

Appendix G

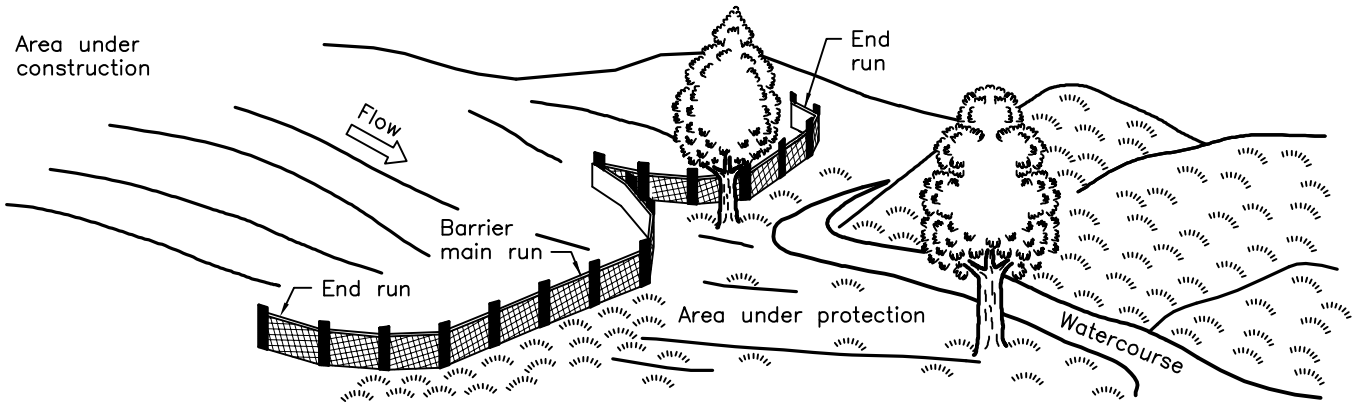
Significant Wildlife Habitat

Significant Wildlife Habitat Screening				
Signficant Wildlife Habitat Type	**General Habitat Description**	**ELC Observed**	**SWH Present**	**Comments**
Wildlife Concentration Areas				
Waterfowl Stopover and Staging Areas (Terrestrial)	Fields with sheet water during the spring	YES	YES	SWH Present
Waterfowl Stopover and Staging Areas (Aquatic)	Ponds, marshes, lakes, bays, coastal inlets, and watercourses used during migration	YES	YES	SWH Present
Shorebird Migratory Stopover Area	Shorelines of lakes, rivers and wetlands, including beach areas, bars and seasonally flooded, muddy and un-vegetated shoreline habitats	YES	YES	SWH Present
Raptor Wintering Area	The habitat provides a combination of fields and woodlands that provide roosting, foraging and resting habitats for wintering raptors	NO	NO	ELC Not Observed
Bat Hibernacula	Caves, mine shafts, underground foundations and Karsts. Hibernacula relatively poorly known	NO	NO	ELC Not Observed
Bat Maternity Colonies	Mature forests with >10 ha of large diameter (>25 cm dbh) wildlife trees, 21 snags per hectare preferred	NO	NO	ELC Not Observed
Turtle Wintering Areas	Within core habitat, water must be deep enough not to freeze and have soft mud substrates	YES	NO	Criteria not met
Reptile Hibernaculum (Turtles assessed separately)	Below frost lines in burrows, rock crevices and other natural or naturalized locations. Rock crevices, talus slopes, etc.	YES	NO	Criteria not met
Colonial Nesting Bird Breeding Habitat (Bank and Cliff)	Eroding banks, sandy hills, borrow pits, steep slopes, sand piles, cliff faces, bridge abutments, silos, barns. Man-made structure and disturbance over 2 years old	YES	NO	Criteria not met
Colonial Nesting Bird Breeding Habitat (Tree/Shrubs)	Live or dead standing trees (typically 11 to 15 m tall) in wetlands, lakes, islands and peninsulas. Occasionally shrubs and emergent vegetation.	NO	NO	ELC Not Observed
Colonial Nesting Bird Breeding Habitat (Ground)	Rocky island or peninsula within a lake or river. Close proximity to watercourses in open fields or pastures with scattered trees or shrubs	YES	NO	Criteria not met
Migratory Butterfly Stopover Areas	At least 10 ha in size with combination of field and forest within 5 km of Lake Ontario	YES	YES	SWH Present
Landbird Migratory Stopover Areas	Woodlots need to be >10 ha in size and within 5 km of Lake Ontario	NO	NO	ELC Not Observed
Deer Yarding Areas	Core (Stratum I) is located within Stratum II. Core is critical for survival of deer during winter months	NO	NO	ELC Not Observed
Deer Winter Congregation Areas	Large woodlots typically >100 ha, however smaller woodlots with densities of 0.1 - 1.5 deer/ha may also be considered	NO	NO	ELC Not Observed
Rare Vegetation Communities				
Cliffs and Talus Slopes	Cliff is vertical to near vertical >3 m tall Talus slope is rock rubble at base of a cliff made up of coarse rock debris	NO	NO	ELC Not Observed
Sand Barren	Typically >0.5 ha with exposed sand, generally sparsely vegetated and caused by lack of moisture, periodic fires and erosion	YES	YES	SWH Present
Alvar	Typically >0.5 ha with level, mostly fractured calcareous bedrock	NO	NO	ELC Not Observed
Old Growth Forest	Woodland areas 30 ha or greater with at least 10 ha interior habitat assuming 100 m buffer at edge of forest	NO	NO	ELC Not Observed
Savannah	Any tallgrass prairie habitat that has tree cover between 25 - 60%	NO	NO	ELC Not Observed
Tallgrass Prairie	Dominated by prairie grasses with < 25% tree cover	NO	NO	ELC Not Observed
Other Rare Vegetation Communities	Beaches, fens, forest, marsh, barrens, dunes and swamps	NO	NO	ELC Not Observed
Specialized Habitat for Wildlife				
Waterfowl Nesting Area	Extends 120 m from a wetland (>0.5 ha) or a wetland (>0.5 ha) and any small wetlands or a cluster of 3 small wetlands where waterfowl nesting is known to occur	YES	YES	SWH Present
Bald Eagle and Osprey Nesting, Foraging and Perching Habitat	Nests are associated with lakes, ponds, rivers or wetlands along forested shorelines, islands or in structures over water	YES	YES	SWH Present
Woodland Raptor Nesting Habitat	All natural or conifer plantation woodland / forest stands >30 ha with >10 ha of interior habitat	YES	YES	SWH Present
Turtle Nesting Areas	Close to water with sand and gravel that turtles are able to dig in, located in open sunny areas.	YES	YES	SWH Present
Seeps and Springs	Any forested area (with >25% meadow/field/pasture) within headwaters of a stream or river system	NO	NO	ELC Not Observed
Amphibian Breeding Habitat (Woodland)	Presence of a wetland, pond or woodland pool >500m^2, within or adjacent to woodland	NO	NO	ELC Not Observed

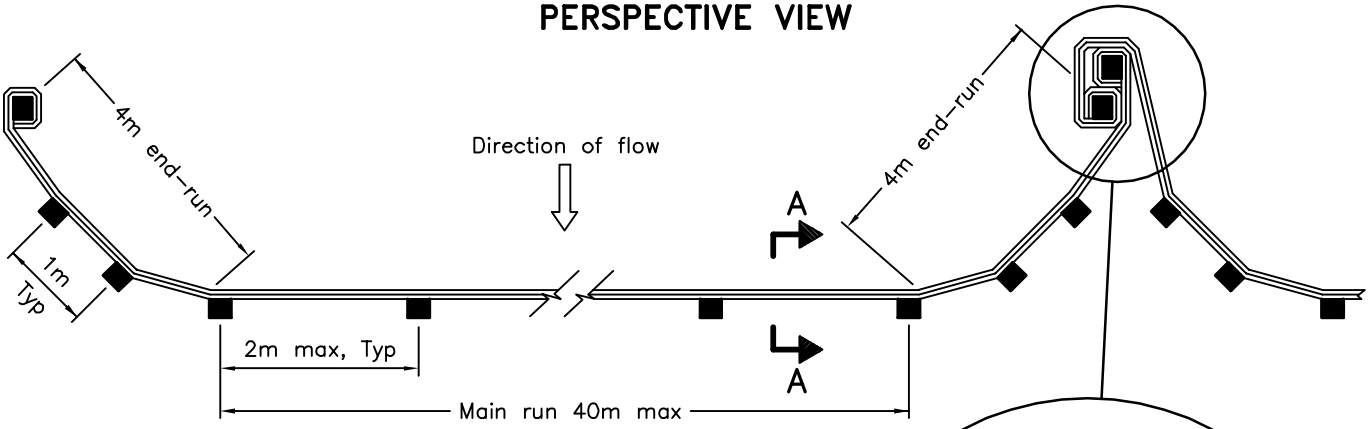
Significant Wildlife Habitat Screening				
Signficant Wildlife Habitat Type	**General Habitat Description**	**ELC Observed**	**SWH Present**	**Comments**
Amphibian Breeding Habitat (Wetlands)	Wetlands >500m^2 (25m diameter), supporting high species diversity	YES	NO	Criteria not met
Woodland Area-Sensitive Breeding Bird Habitat	Habitats where interior forest birds are breeding, typically large mature (>60 yrs old) forest stands or woodlots >30 ha	NO	NO	ELC Not Observed
Habitat of Species of Conservation Concern (other than Threatened or Endangered)				
Marsh Breeding Bird Habitat	Nesting occurs in wetlands consisting of shallow water with emergent aquatic vegetation Green Heron: edge water habitat	YES	YES	SWH Present
Open Country Bird Breeding Habitat	Large grassland areas (including natural and cultural field and meadows) >30 ha	YES	NO	Criteria not met
Shrub/Early Successional Bird Breeding Habitat	Large field areas succeeding to shrub thicket habitats >10 ha in size	NO	NO	ELC Not Observed
Terrestrial Crayfish	Wet meadow edges of shallow marshes. *Only found in SW Ontario	YES	NO	Criteria not met
Special Concern and Rare Wildlife Species	All Special Concern and Provincially Rare plant and animal species. May also consider Area Sensitive and Culturally Sensitive Species	YES	YES	SWH Present
Animal Movement Corridors				
Amphibian Movement Corridors	Determined as part of breeding habitat assessment	YES	NO	Criteria not met
Deer Movement Corridors	All proposals within Stratum II Deer Wintering Area have potential for corridors	YES	NO	Criteria not met
General Comments:				

Appendix H

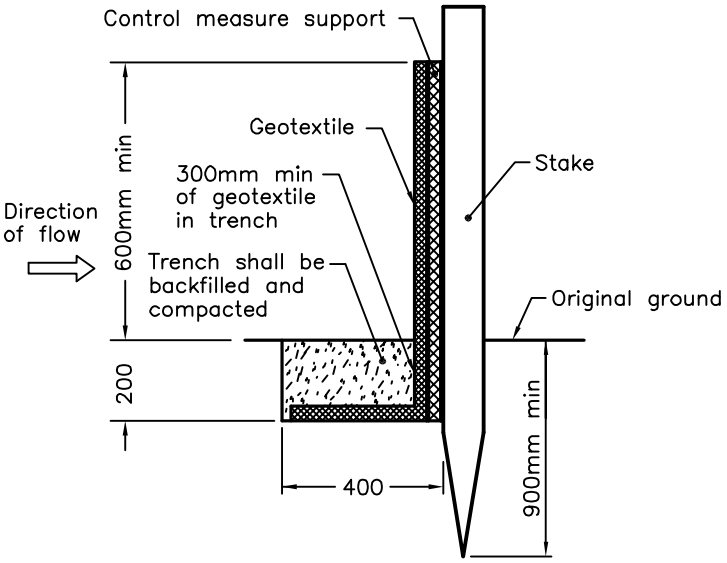
Heavy Duty Silt Fence Diagram



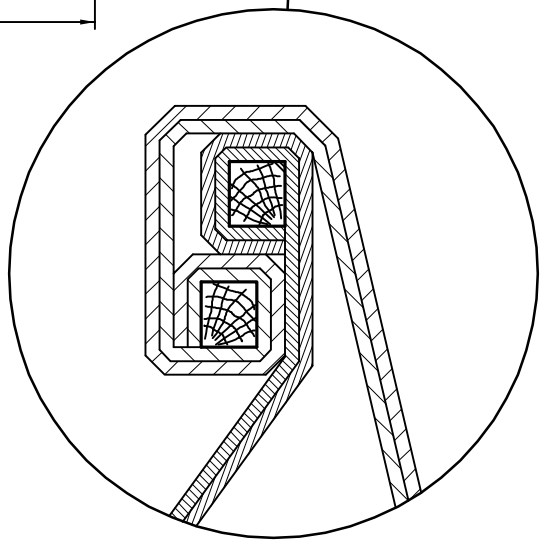
PERSPECTIVE VIEW



PLAN



SECTION A–A



JOINT DETAIL

NOTE:

A All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2015	Rev	2
HEAVY–DUTY SILT FENCE BARRIER			
	OPSD 219.130		